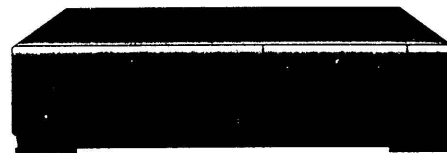
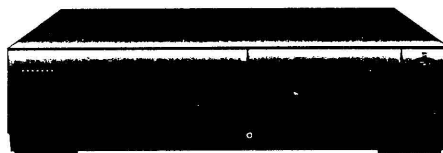


Service
Service
Service

VR702/01/08/13

VR703/02/05/16

7SB02/03/06/08/09/10/11/16



Service Manual

CONTENTS

Chapter

- | | |
|---|---|
| 1 | Table of contents per page
Survey of PCBs
Technical data
Safety instructions
Front/rear view of the video
Description of the controls and connections
Supplementary service information |
| 2 | Error diagnosis system
Disassembly of the set
Servicing of SMD's
Survey of symbols used
Block diagram
Wiring diagram |
| 3 | Survey of abbreviations used
Circuit board assembly
Circuit diagrams
Measurements
Electrical adjustment instructions |
| 4 | Cabinet exploded view
Exploded view of the frontpanel
Partslist tape deck
Exploded view of the tapedeck
Parts lists set and PCB's |

Survey of types:

VR502 FM-Audio, Testpicture
VR502/05FM-Audio, On Screen Display
VR702 Video LP, FM-Audio, On Screen Display
VR703 Video LP, FM-Audio, VPT Teletextprogramming
7SB02 Video LP, FM-Audio, On Screen Display

Survey of versions:

/01 PAL B/G, German Stereo
/02 PAL-Secam B/G, VPS, German Stereo
/05 PALI, NICAM
/08 PAL B/G, German Stereo
/13 PAL B/G, German Stereo plus NICAM
/16 PAL B/G, NICAM

Survey of tape decks

VR502 : JED 2/2 (2 Video+2 FM-Audio Heads)
VR702, VR703,
7SB02 : JED 4/2 (4 Video+2 FM-Audio Heads)

Tape deck documentation

G-Tapedeck 4822 726 14533

Survey of remote controls

VR502, VR702,
VR703 : RT204/101 4822 218 30568
7SB02 : RT204/201 4822 218 30571

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

TABLE OF CONTENTS

Chapter 1

- 1-1 Frontpage
- 1-2 Table of contents
- 1-3 Survey of PCBs
- 1-4 Technical specifications
- 1-5 Safety instructions
- 1-6 Front/rear view of the set
Remote control
- 1-7 Front/rear view of the set
Description of controls and terminal sockets
- 1-8 Description of the system of
publication of changes

Chapter 2

- 2-1 Error diagnosis system
- 2-2 Error diagnosis system
- 2-3 Error diagnosis system
- 2-4 Error diagnosis system
- 2-5 Disassembly of the set
- 2-6 Disassembly of the set
- 2-7 Disassembly of the set
- 2-8 Servicing of SMDs
- 2-9 Survey of symbols used
- 2-10 Survey of symbols used
- 2-11 Block diagram Signalelectronic VPT, NICAM
- 2-12 Block diagram Signalelectronic
OSD, Multistereo
- 2-13 Block diagram Deckelectronic
- 2-14 Wiring diagram

Chapter 3

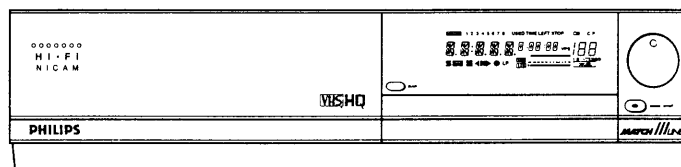
- 3-1 Survey of abbreviations used
- 3-2 JSM-40 PCB drawing
- 3-3 JSM-40 circuit diagram
- 3-4 HV4/2 PCB drawing
- 3-5 HV4/2 circuit diagram
- 3-6 JFBU PCB drawing
- 3-7 JFBU PCB drawing
- 3-8 JFBU Signalelectronic adjustments
- 3-9 JFBU Signalelektronik circuit diagram
- 3-10 JFBU Deckelectronic circuit diagram
- 3-11 JFBU Deckelectronic adjustments
- 3-12 JFBU Lin- Audio adjustments
- 3-13 JFBU Lin- Audio circuit diagram
- 3-14 JFBU Front- End circuit diagram adjustments
- 3-15 MEO Main erase oscillator
- 3-16 JAF PCB drawing
- 3-17 JAF PCB drawing
- 3-18 JAF I/O circuit diagram
- 3-19 JAF Stereo circuit diagram adjustments
- 3-20 JAF Fm- Audio circuit diagram
- 3-21 JAF Fm- Audio adjustments
- 3-22 JDC5 PCB drawing adjustments
- 3-23 JDC5 circuit diagram
- 3-24 JDC7 PCB drawing adjustments
- 3-25 JDC7 circuit diagram
- 3-26 JDC0 PCB drawing adjustments
- 3-27 JDC0 circuit diagram
- 3-28 JCO/OSD Control Panel
PCB drawing adjustments
- 3-29 JCO/OSD circuit diagram
- 3-30 JCO/VPT Control Panel PCB drawing adjustments
- 3-31 JCO/VPT circuit diagram

Chapter 4

- 4-1 Exploded view of cabinet parts
- 4-2 Parts list of the cabinet parts
- 4-3 Exploded view of the frontpanel
- 4-4 Parts list frontpanel
- 4-5 Parts list tapedeck
- 4-6 Parts list tapedeck
- 4-7 Exploded view of the tapedeck
- 4-8 Exploded view of the tapedeck
- 4-9 Exploded view of the tapedeck
- 4-10 JSM-40 parts list
- 4-11 JFBU parts list
- 4-12 JFBU parts list
- 4-13 JFBU parts list
- 4-14 JFBU parts list
- 4-15 JFBU parts list
- 4-16 JFBU parts list
- 4-17 JFBU parts list
- 4-17 HV4/2 parts list
- 4-17 MEO parts list
- 4-18 JAF parts list
- 4-19 JAF parts list
- 4-20 JAF parts list
- 4-21 JAF parts list
- 4-22 JDC/7 parts list
- 4-23 JDC0, JDC5 parts list
- 4-24 JCOOSD parts list
- 4-25 JCOOSD parts list
- 4-25 JCOVPT parts list
- 4-26 JCOVPT parts list
- 4-27 JCOVPT parts list

Service
Service
Service

14601



Service Manual

For technical data reference is made to the service manual
VR502, VR703 (4822 726 14871)
The present manual only states the **differences**.

Survey of sets and CBAs

	VR712/05	VR713/05
Power supply		
JSM-40	.	.
Head Amplifier		
HV 4/2	.	.
Family board		
JFBU7/05	.	.
Main erase oscillator		
MEO	.	.
I/O-Board, FM-Audio		
JAF7/05 Pal I, Nicam	.	.
Operating Panel		
JDC7	.	.
Control board		
JCOOSD	.	
KCO73P		.
Tape Deck		
KED 4/2	.	.

Survey of types

VR712/05: Pal I, NICAM, Video LP, FM-Audio,
On Screen Display

VR713/05: Pal I, NICAM, Video LP, FM-Audio,
VPT Teletextprogramming, PDC

Survey of tape decks

VR712, VR713: KED 4/2 (4 Video+2 FM-Audio Heads)

Tape deck documentation

G-Tapedeck: 4822 726 14533

Survey of remote controls

VR712, VR713: RT214/111 4822 218 30605

Differences in respect to the basic manual:

Front panel parts (page 4-1, 4-4):

Item	Description	VR712	VR713
13	Lift flap	4822 443 63514	4822 443 63508
20	Front panel	4822 443 41101	4822 443 41106
20/3	Switchplate	4822 466 92935	4822 466 93015

Electrical differences for VR713:

Control board KCO73P (page 3-31, 4-27)

Item	Description	VR713
7751	EPROM PDC	4822 209 30693
7753	CMOS RAM	4822 209 63983

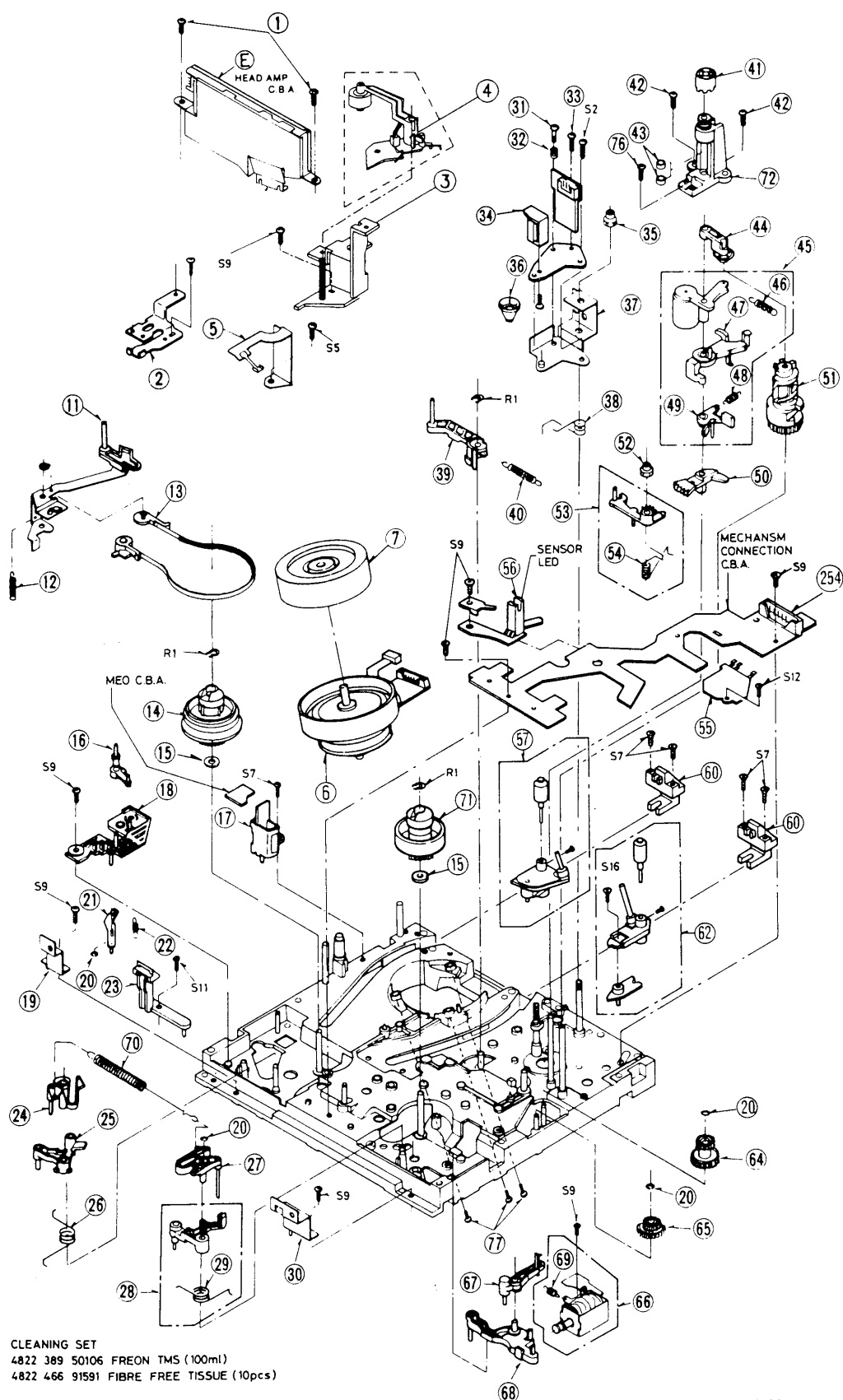
Safety regulations require that the set be restored to its original condition
and that parts which are identical with those specified be used.

Exploded view (top view) of the
deck with cleaning roller

3 changed part
4 additional part

4822 403 53565
4822 403 70433

mounting angle (right)
cleaning roller



SERVICE INFORMATION

DE GRAAF WHSHP7

FINLANDIA VHSHP7

VR702

For Service Manuals
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY.
Tel (01844) 351694
Fax (01844) 352554
email:- sales@mauritron.co.uk



COMMUNICATIONS & TRAINING SERVICES

CTS

EXCELLENCE THROUGH PEOPLE

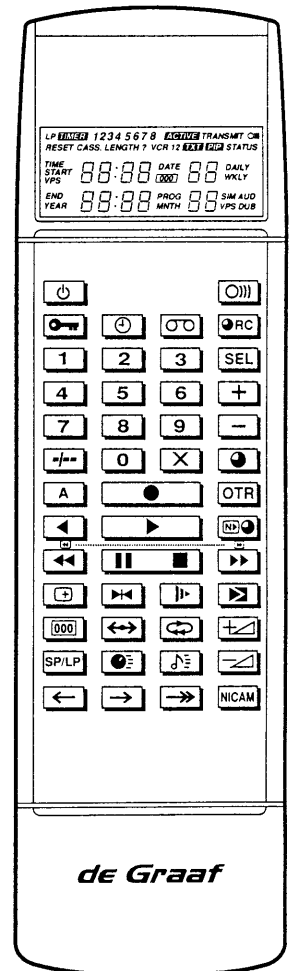
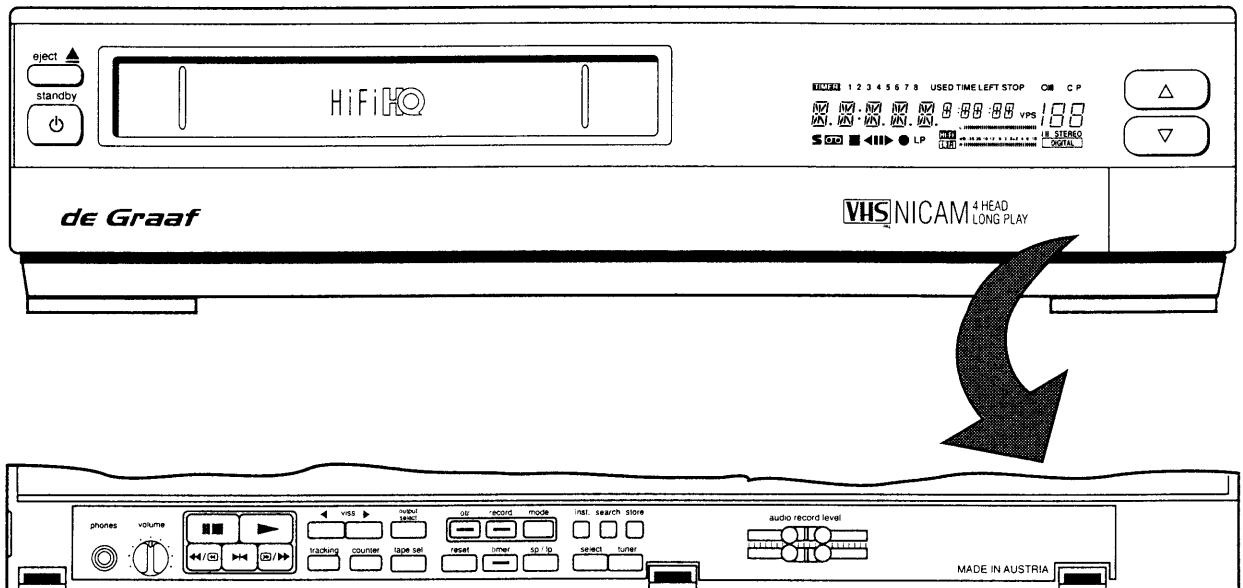
Stock category	Nearest equivalent model
DE GRAAF WHSHP7	VR703/05 Nicam LCD-RC
FINLANDIA VHSHP7	VR703/05 Nicam LCD-RC

Survey of CBA's VHSHP7/WHSHP7	
Family board	JFBU7/05
Headamplifier	HV4/2
Power supply	JSM40
Operating panel	JDCO-C
Control panel	JCOTPC
FM-Audio, I/O	JAF7/05

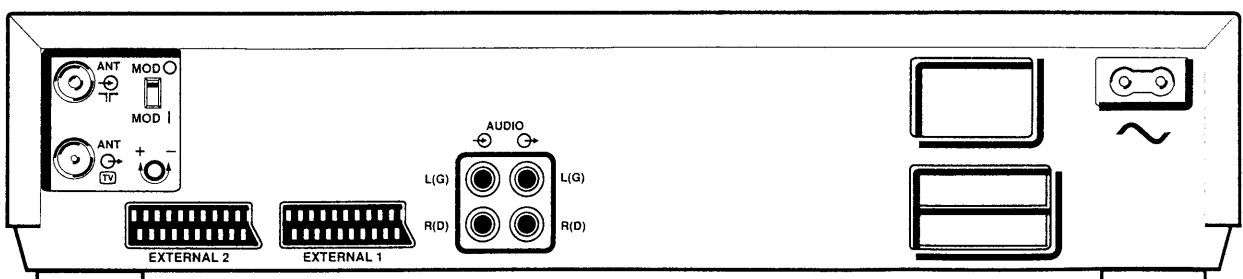
Type	Tapedeck	Remote Control	Dir. for use
WHSHP7	JED4/2	8622 662 05772	3103 166 04600

For technical data reference is made to the service manual of VR703/05.
The present manual only states the differences.

Safety regulations require that the set be restored to its
original conditions and that parts which are identical
with those specified be used.



Remote Control
RT205/772
8622 662 05772



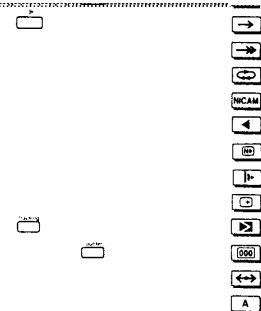
CONTROLS AND CONNECTIONS

Symbols on the video recorder	Symbols on the remote control	Function
		Stand by
		Video Cassette eject
		Tuner Mode
		Record (push buttons A and simultaneously on the remote control).
		Installation Procedure
		Search for a TV Station
		Store a TV Station
		Function Select
		Setting up a Timer Block
		Down
		Up
		Rewind/Picture Search Backwards
		Still Picture and Frame Advance
		Wind/Picture Search Forwards
		Pause / Stop
		Play
		Transmit
		Child Lock
		Set Clock on the Remote Control
		Tape Length Selector
		Timer Block Setting on Remote Control
		Digit Buttons
		Single or Double Digit Entry
		Reset/Cancel
		One Touch Recording (push buttons A and OTR simultaneously on the remote control)
		Tape speed selector (Standard Play/Long Play).
		Audio tape speed selector (Standard Play/Long Play).
		Recording Mode Selector
		Stereo/Mono/Language 1-2/Audio-Mix selector.
		Headphone Volume Control
		Headphone Socket
		Audio Recording Level
		Select Previous Index Marker

ers (Intro-scan)

Time Left and Tape Counter
Tape Position
Record and OTR

Socket 1
Socket 2



Rear of the video recorder:

EXT 1
EXT 2

MOD 0 MOD 1
AUDIO R (D)
AUDIO L (G)
AUDIO R (D)
AUDIO L (G)

The following functions may also be used with certain televisions.



Personal preference button
 TV Volume Down
 TV Volume Up

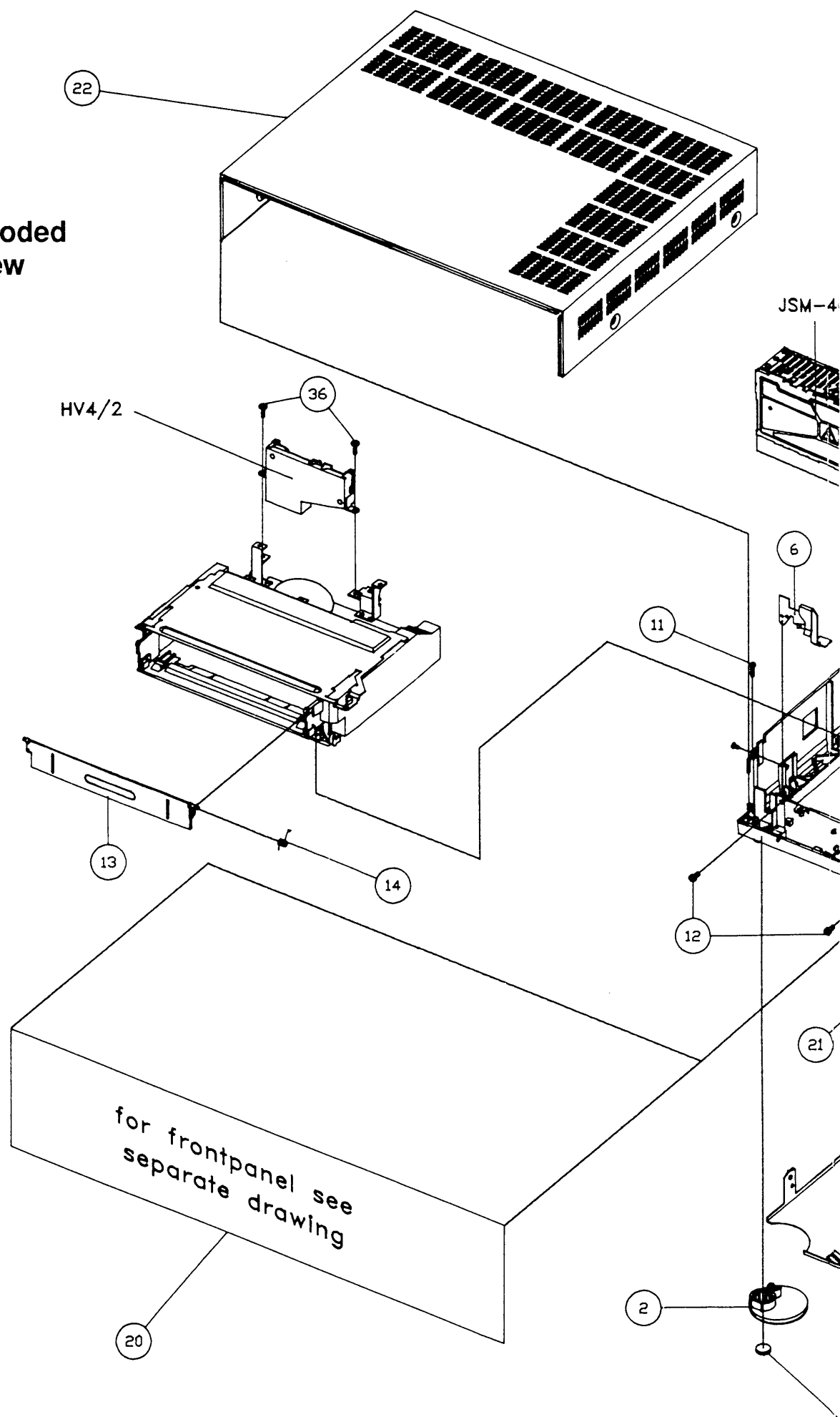
Select Next Index Marker
 Searching For Index Marker
 Endless Play
 NICAM on/off
 Play Reverse
 Fast Motion Play
 Slow Motion Play
 No Function
 Auto Tracking
 Selector for Time Use, Time
 GOTO - Searching for a
 Used in conjunction with

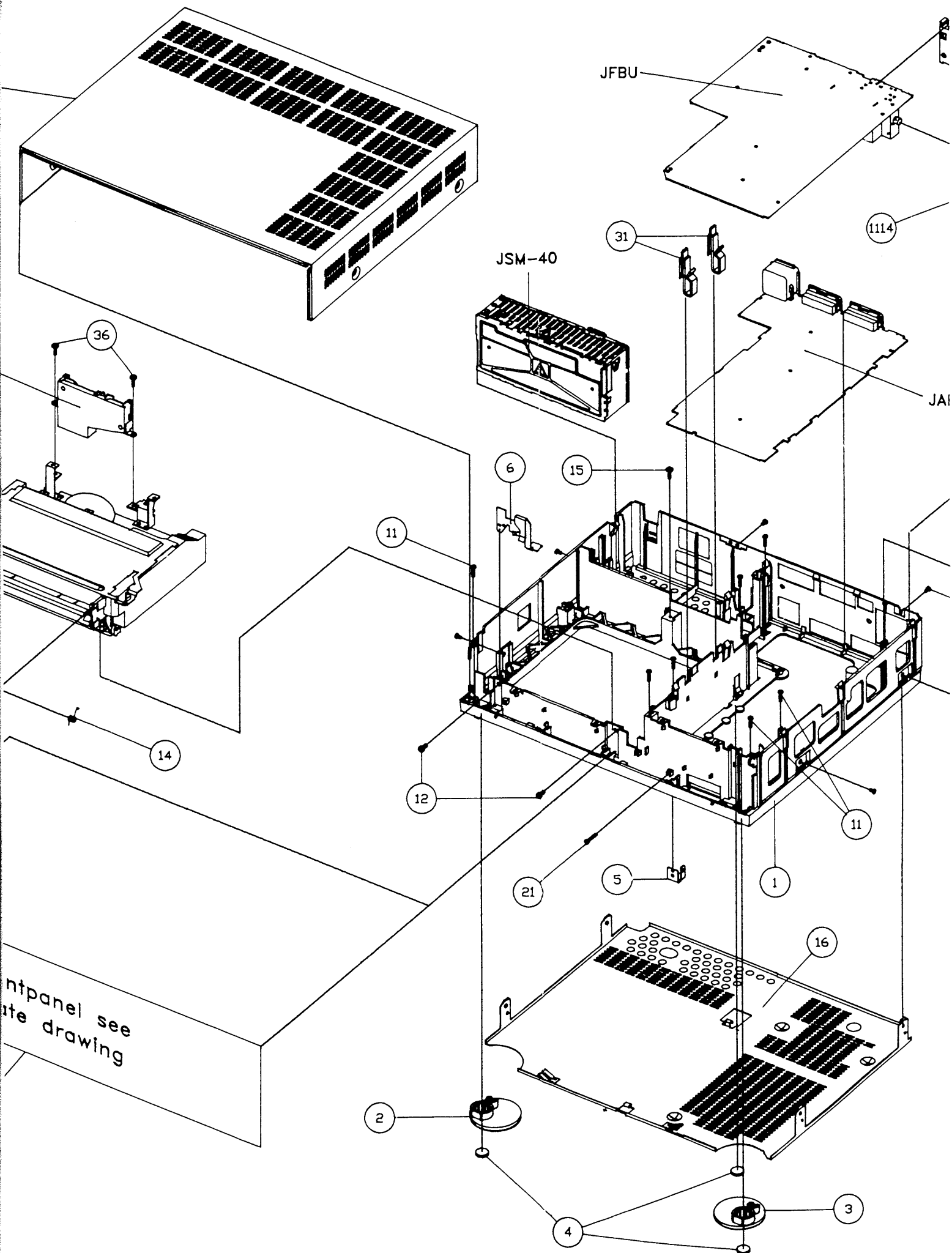
Aerial Input Socket
 Aerial Output Socket
 Channel Output Control
 21 Pin Scart Connection
 21 Pin Scart Connection
 Mains Socket Input
 Modulator switch (on = I
 Audio input Right socket
 Audio input Left socket
 Audio output Right socket
 Audio output Left socket

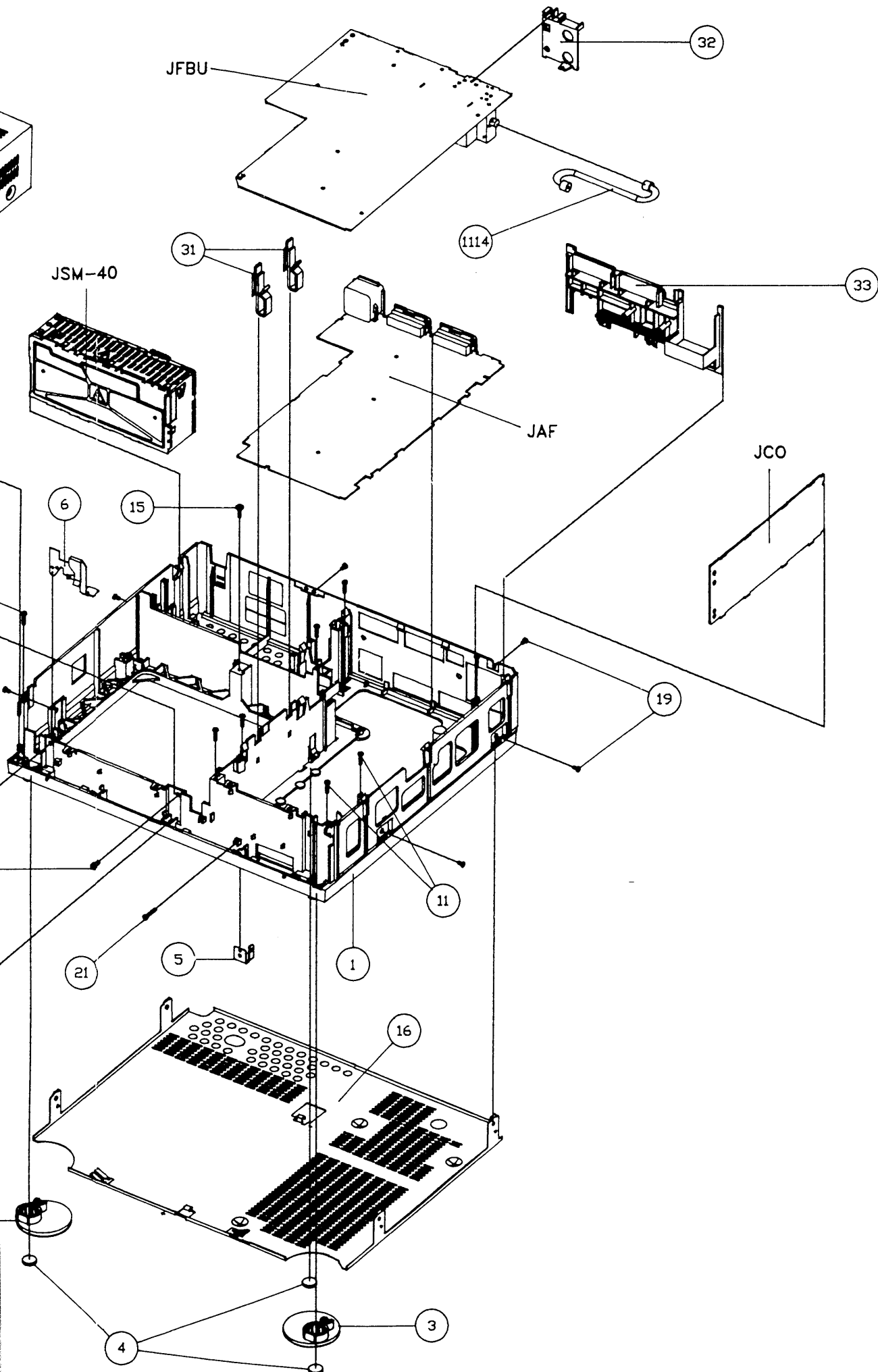
HANDSET SYMBOLS

	operate off (standby)
	transmit
	childlock
	clock setting
	tape length selector
	timed recording via the HANDSET display
SEL	function select
+	up
-	down
-/-	one/two digit entry
X	reset
	timed recording via the VCR display
	A record (press simultaneously)
A OTR	one touch recording (press simultaneously)
	play reverse
	play
	fast motion
	rewind (visual search)
	pause/stop
	wind (visual search)
	no function
	still/superslow motion
	slow motion
	auto-tracking
	tape counter selector
	tape position search
	endless play
	no function
	no function
SP/LP	standard play/long play
	record mode
	audio output
	index search (rewind)
	index search (wind)
	intro scan
NICAM	nicam digital stereo sound selector

Exploded
view

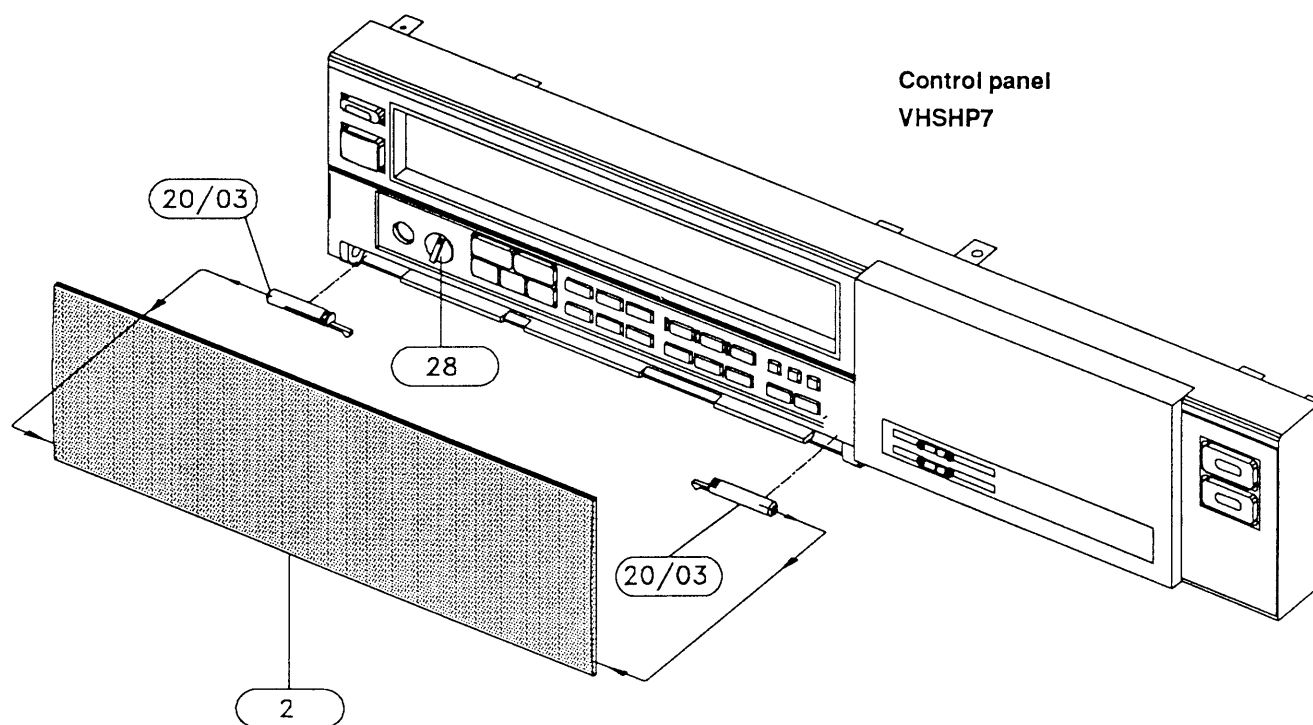






STOCKLIST CABINET PARTS

	VHSHP7	WHSHP7	
1	4822 464 50812	4822 464 50812	Frame
2	4822 462 41736	3103 104 12480	Foot left
3	4822 462 41737	3103 104 12470	Foot right
4	4822 462 41289	4822 462 41289	Foot
5	4822 402 61354	4822 402 61354	Bracket
11	4822 502 11838	4822 502 11838	Screw
12	4822 502 11697	4822 502 11697	Screw M4*8
13	3103 178 00350	3103 178 00130	Lift flap
14	4822 492 52044	4822 492 52044	Spring
15	4822 502 30546	4822 502 30546	Screw 4N*3/4
16	4822 443 51204	4822 443 51204	Bottom
19	4822 502 13173	4822 502 13173	Screw
20	3103 138 56980	3103 109 06640	Control panel
21	4822 502 13668	4822 502 13668	Screw
22	4822 443 63141	4822 443 63141	Topcover
31	4822 401 11377	4822 401 11377	Cable clamp
32	4822 443 63171	4822 443 63171	Cover
33	4822 402 61355	4822 402 61355	Support
36	4822 502 13307	4822 502 13307	Screw
1114	4822 321 60916	4822 321 60916	Coaxcable
Miscellaneous			
	4822 321 10635	4822 321 10635	Mains cord
	4822 321 23415	4822 321 23415	Antenna cable
	4822 321 22369	4822 321 22369	Chinch cable
	8622 662 05762	8622 662 05772	Remote control



VHSHP7

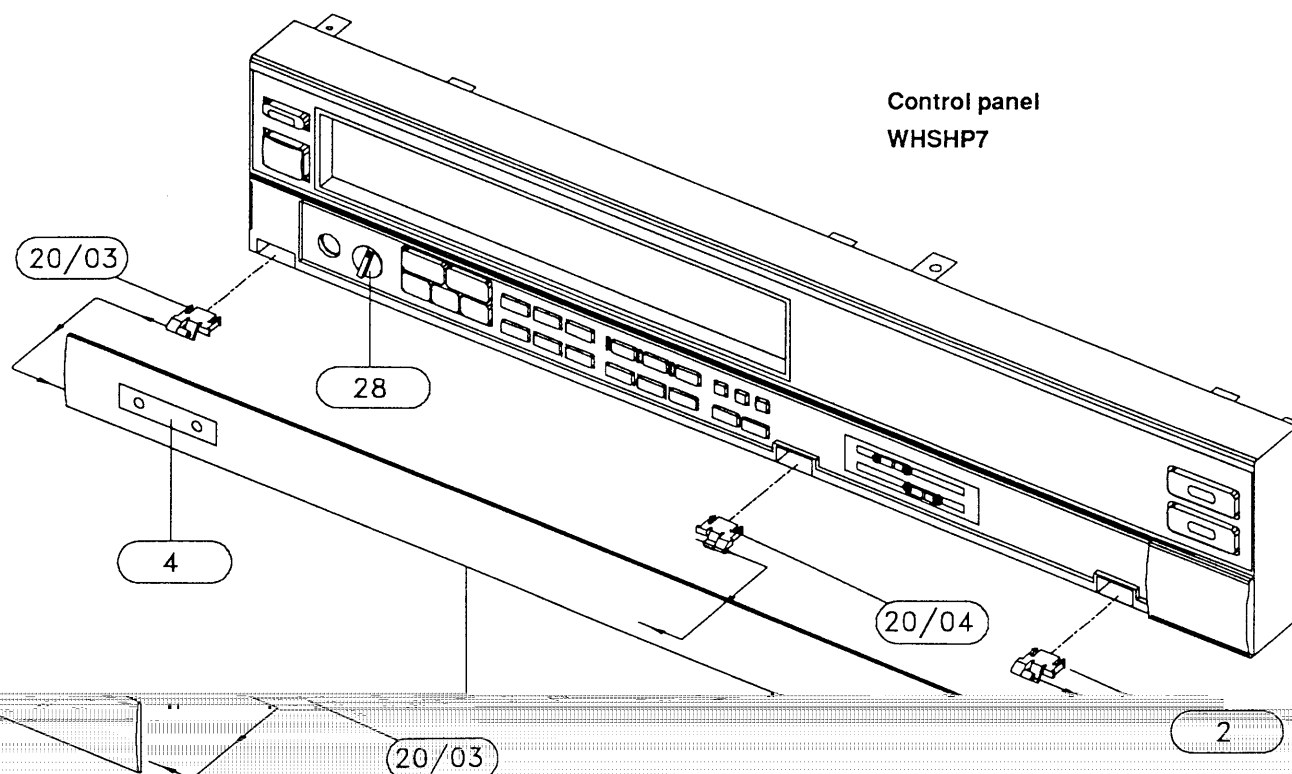
Control panel

2	3103 109 06680	Front flap
20/3	3103 188 08560	Bolt
28	4822 413 31571	Potmeterknob

WHSHP7

Control panel

2	3103 109 06560	Front flap
20/03	4822 417 10844	Hinge left
20/04	4822 417 10839	Hinge right
28	4822 413 31571	Potmeterknob



Survey of sets and PCBs

	VR502 /01	/02	/05	/13	/16	VR702 /01	/08	/13	VR703 /02	/05	/16	7SB02 /03	/06	/08	/09	/10	/11	/16
Power Supply																		
JSM-40 Power Supply	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Head Amplifier																		
HV 4/2 Head Amplifier	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Family Board																		
JFBU5/01 Pal B/G	X			X	X													
JFBU5/02 Pal B/G; VPS		X																
JFBU5/05 Pal I			X															
JFBU7/01 Pal B/G, LP						X	X	X			X							X
JFBU7/02 Pal B/G, VPS, LP									X			X	X	X	X	X	X	
JFBU7/05 Pal I, LP										X								
Main Erase Oscillator																		
MEO	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
I/O-Board, FM-Audio																		
JAF5/02 Pal B/G German Stereo	X	X																
JAF5/05 Pal I, NICAM			X															
JAF5/13 Pal B/G, German Stereo+NICAM				X														
JAF5/16 Pal B/G, NICAM					X													
JAF7/02 Pal B/G, German Stereo						X	X		X			X	X	X	X	X	X	
JAF7/05 Pal I, NICAM										X								
JAF7/13 Pal B/G, German Stereo+NICAM								X										
JAF7/16 Pal B/G, NICAM											X							X
Operating Panel																		
JDC5 Operating Panel	X	X	X	X	X													
JDC7 Operating Panel						X	X	X	X	X	X							
JDCO-A Operating Panel												X	X	X	X	X	X	X
Control Board																		
JCO/TPC Testpicture	X	X		X	X													
JCO/OSD			X			X	X	X				X	X	X	X	X	X	X

TECHNICAL DATA

Mains voltage
Mains frequency
Power consumption
Power consumption
Ambient temperature
Relative humidity
Dimensions
Weight
Fast forward/rewind time
Position of use
Video-resolution
Audio

Audio FM

TECHNISCHE DATEN

Netzspannung
Netzfrequenz
Leistungsaufnahme
Leistungsaufnahme
Raumtemperatur
Relative Luftfeuchte
Abmessungen
Gewicht
Vor-/Rückspulzeit
Betriebslage
Video-Auflösung
Audio

Audio FM

CARACTERISTIQUES

Tension secteur 220 - 240 V
Fréquence 47 - 63 Hz
Puissance absorbe 19 - 27 W
Puissance absorbe 12 - 16 W (stand by)
Température ambiante +10° - +35°
Humidité relative 20 - 80%
Encombrement 420 x 101 x 381 mm
Poids ± 6,5 kg
Temps (re-)bobinage max. 270s (E180 cass.)
Position d'emploi horizontally, max 15°
Puissance absorbée >240 lines
Audio SP 80Hz - 10kHz (<8dB)
LP 80Hz - 5kHz (<8dB)
20Hz - 20kHz (<3dB)

Audio FM

TECHNISCHE GEGEVENS

Netspanning
Netfrequentie
Opgenomen vermogen
Opgenomen vermogen
Omgevingstemperatuur
Relatieve vochtigheid
Afmetingen
Gewicht
Vooruit/terugspoeltijd
Gebruikspositie
Oplossend vermogen
Audio

Audio FM

DATOS TECNICOS

Tensión de red
Frecuencia de red
Consuma de potencia
Consuma de potencia
Temperatura ambiente
Humedad relativa
Dimensiones
Peso
tiempo de (re-)bobinado
Posición de uso
Resolución video
Audio

Audio FM

DATI TECNICI

Tensione di alimentazione 220 - 240 V
Frequenza di rete 47 - 63 Hz
Potenza assorbita 19 - 27 W
Potenza assorbita 12 - 16 W (stand by)
Temperatura ambiente +10 ° - +35°
Umidità relativa 20 - 80%
Dimensioni 420 x 101 x 381 mm
Peso ± 6,5 kg
Tempo di (ri-)avvolgimento max. 270s (E180 cass.)
Posizione di funzionamento horizontally, max 15°
Risoluzione video >240 lines
Audio SP 80Hz - 10kHz (<8dB)
LP 80Hz - 5kHz (<8dB)
20Hz - 20kHz (<3dB)

Audio FM

SAFETY INSTRUCTIONS

- Safety regulations demand that the set be restored to its original condition and that components identical with the original types be used.
Safety components are marked by the symbol 
- All ICs and many other semi-conductors are susceptible to electrostatic discharges(ESD). Careless handling during repair may reduce life drastically. When repairing, make sure that you are conneted with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools on the same potential.
- A set to be repaired should always be connected to the mains via a suitable isolating transformer.
- Never replace any modules or any other parts while the set is switched on.
- Use plastic instead of metal alignment tools. This in order to prelude short-circuit or to prevent a specific circuit from being rendered unstable.

REMARKS

- The direct voltages and oscillograms ought to be measured relative to the set mass.
- The direct voltages and oscillograms mentioned in the diagrams ought to be measured with a colour bar signal and the picture carrier at 503.25 MHz (C25).
- The oscillograms and direct voltages have been measured in RECORD or PLAY mode.
- The semiconductors, which are mentioned in the circuit diagram and in the parts lists, are fully exchangeable per position with the semiconductors in the set, irrespective of the type designation of these semiconductors.

SICHERHEITSHINWEISE

- Die Sicherheitsvorschriften erfordern es, dass sich das Gerät nach der Reparatur in seinem originalen Zustand befindet und dass die zur Reparatur benutzten Ersatzteile mit den Original-Ersatzteilen identisch sind.
Sicherheits-Bauteile sind mit der Markierung versehen 
- Alle IC's und Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD). Unvorschriftsmässige Behandlung von Halbleitern im Reparaturfall, kann zur Zerstörung dieser Bauteile oder zu einer drastischen Reduzierung der Lebensdauer führen. Sorgen Sie dafür, dass Sie sich im Reparaturfall über ein Armband mit Widerstand auf dem gleichen Potential, wie die Masse des Gerätes befinden. Alle Bauteile, Werkzeuge und Hilfsmittel sind auf das gleiche Potential zu legen.
- Ein zu reparierendes Gerät ist immer über einen Trenntransformator an die Netzspannung anzuschliessen.
- Bei eingeschaltetem Gerät dürfen keine Module oder sonstige Einzelteile ausgetauscht werden.
- Zum Abgleich sind ausschliesslich Kunststoffwerkzeuge zu benutzen (keine Metallwerkzeuge verwenden). Dadurch wird vermieden, dass ein Kurzschluss entstehen kann oder eine-Schaltung instabil wird.

ANMERKUNGEN

- Die Gleichspannung und Oszillogramme sind gegen Gerätemasse zu messen.
- Die Gleichspannungen und Oszillogramme angeführt in den Schaltbildern sollen unter folgenden Bedingungen gemessen werden: Farbbalkensignal, Bildträger auf 503.25 MHz (C25)
- Die Oszillogramme und Gleichspannungen sind in RECORD oder PLAY gemessen.
- Die in den Stücklisten aufgeführten Bauteile sind positionsweise voll auswechselbar gegen die Bauteile in dem Gerät, ungeachtet der etwaigen Typenbezeichnungen.

AVERTISSEMENTS

- Les normes de sécurité exigent qu'après réparation l'appareil soit remis dans son état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées. Les composants de sécurité sont marqués .
- Tout les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité. Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.
- Toujours alimenter un appareil à réparer à travers un transfo d'isolement.
- ~~Ne jamais remplacer les modules ni d'autres composants quand l'appareil est sous tension.~~
- Pour l'ajustage, utiliser des outils en plastique au lieu d'instruments métalliques. Ceci afin d'éviter les court-circuits et exclure l'instabilité dans certains circuits.

OBSERVATIONS

- La mesure des tensions continues et des oscillogrammes doit se faire par rapport à la terre de l'appareil.
- La mesure des tensions continues et des oscillogrammes figurant sur le schéma doit se faire dans un signal de barre couleur porteuse image sur 503.25 MHz (C25).
- Les oscillogrammes et tension sont mesurées en mode RECORD ou PLAY.
- Les semi-conducteurs indiqués dans le schéma de principe et à la liste des composants, sont interchangeables par repère sur ce chassis avec les semi-conducteurs de l'appareil quelle que soit la désignation de type donnée sur ces semi-conducteurs.

AVISOS

- Las instrucciones de seguridad exigen que después de la reparación el aparato se encuentre en el estado original y que las piezas de repuesto, utilizadas para la reparación, sean idénticas a las originales. Los componentes de seguridad estan marcados con .
- Todos los IC y semiconductores son sensibles a descargas electrostáticas (ESD). Un tratamiento no conforme a las instrucciones de semiconductores en caso de reparación, podría llevar a la destrucción de estos componentes, o a una reducción drástica de la duración. Tenga cuidado de que, en caso de reparación, estar al mismo potencial que la masa del aparato, por una pulsera con resistencia. Ponga todos los componentes, herramientas y recursos al mismo potencial.
- Para reparar un aparato hay que conectarlo siempre a la alimentación a través de un transformador de aislamiento.
- Cuando un aparato está en marcha no pueden ser cambiados módulos u otras piezas de repuesto.
- Para los ajustes hay que utilizar exclusivamente herramientas de plástico (nunca herramientas metálicas). Así se evitan cortocircuitos y circuitos inestables.

NOTAS

- Hay que medir las tensiones continuas y los oscilogramas contra la masa del aparato.
- Las tensiones continuas y los oscilogramas mencionados en los esquemas tienen que ser medidos de manera siguiente: señal barra de color portadora de imagen en 503.25MHz (C25)
- Los oscilogramas y las tensiones continuas son medidas en "RECORD" y "PLAYBACK"
- Los componentes mencionados en las listas se los puede cambiar por los componentes en el aparato, a pesar de eventuales designaciones de tipos.

VEILIGHEIDSLINSTRUCTIES

- Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, indientiek aan de oorspronkelijke, worden toegepast. De veiligheidsonderdelen zijn aangeduid met het symbool .
- Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor, dat U tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op hetzelfde potentiaal.
- Sluit een apparaat dat gerepareerd wordt altijd via een scheidingstransformator aan op de netspanning.
- Verwissel nooit modules of andere onderdelen terwijl het apparaat is ingeschakeld.
- Gebruik voor het afregelen plastic i.p.v. metalen gereedschap. Dit om mogelijke kortsluiting te voorkomen of een bepaalde schakeling instabiel te maken.

OPMERKINGEN

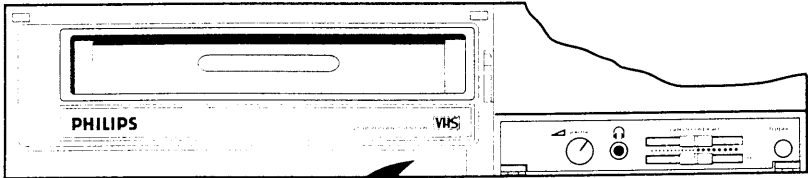
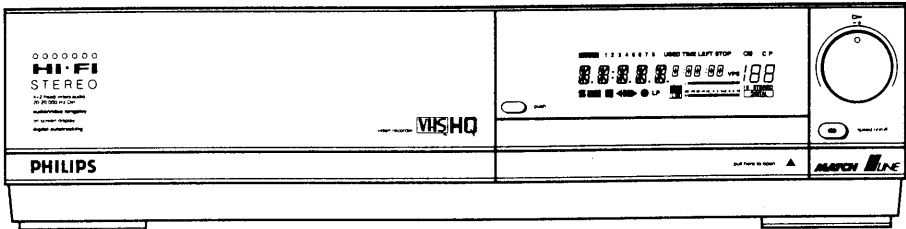
- De gelijkspanningen en oscillogrammen dienen gemeten te worden ten opzichte van de apparaat aarde.
- De gelijkspanningen en oscillogrammen vermeld in de schema's dienen gemeten te worden met een kleuralkensignaal beeldtraag golf op 503.25 MHz (C25).
- De oscillogrammen en gelijkspanningen zijn in RECORD of PLAY mode gemeten.
- De halfgeleiders, die in het pricipeschema en in de stuklijsten, zijn vermeld, zijn per positie volledig uitwisselbaar met de halfgeleiders in het apparaat, ongeacht de typeaanduiding op deze halfgeleiders.

AVVERTIMENTI

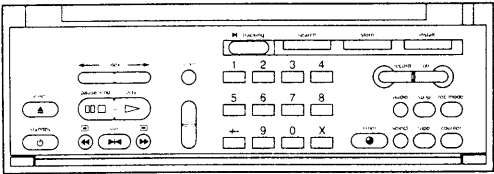
- Le prescrizioni di sicurezza richiedono che l'apparecchio sia ricondotto alle condizioni originali e che siano usati ricambi originali. Componenti di sicurezza sono marcati con .
- Tutti gli IC e semiconduttori sono sensibili a scariche elettrostatiche (ESD). Noncuranze durante la riparazione di semiconduttori possono danneggiarli o condurre ad una riduzione drastica della durata. Durante la riparazione assicurarsi di essere collegati allo stesso potenziale attraverso un bracciale di protezione contro scariche elettrostatiche. Inoltre tenere anche tutti i componenti e gli attrezzi a questo potenziale.
- Apparecchi da riparare bisogna collegarli sempre via un trasformatore isolante (separatore) alla tensione normale.
- Non scambiare moduli o altri componenti quando l'apparecchio è in funzione.
- Per l'accordo usare soltanto attrezzi di plastica (non usare attrezzi metallici). Così si evitano cortocircuiti e collegamenti instabili.

OSSERVAZIONI

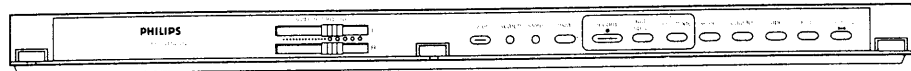
- Misurare le tensioni continue e gli oscillogrammi riferendosi alla massa dell'apparecchio.
- Le tensioni continue e gli oscillogrammi indicati negli schemi di collegamento devono essere misurati secondo le condizioni seguenti: segnale barre colore, portante dell'immagine su: 503.25 MHz (C25).
- Gli oscillogrammi e le tensioni continue sono misurati in RECORD o PLAYBACK.
- I componenti indicati nelle liste sono intercambiabili con quelli nell'apparecchio nonostante l'eventuale denominazione di modelli.



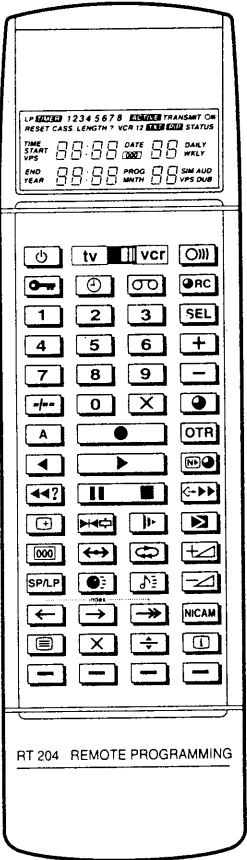
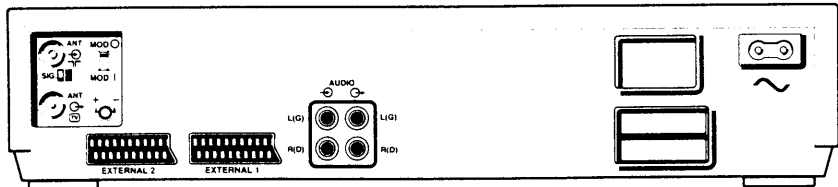
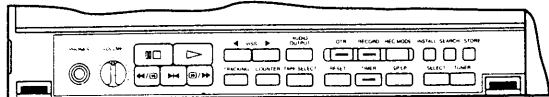
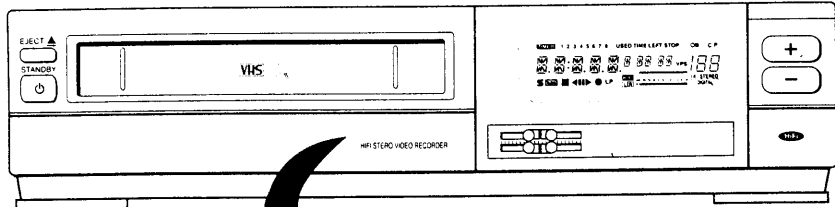
VR702
VR703



VR502



7SB02



Symbols on the video recorder	Symbols on the remote control	Function
		Cassette eject
		Switch off (Stand by)
		Select previous index marker
		Select next index marker
		Pause/Stop
		Play
		Rewind / Picture search backward
		Still picture, frame advance
		Wind / Picture search forward
		Tuner mode
		Up
		Down
		Auto tracking
		Search for a TV channel
		Store a TV channel
		Installation
		Digit buttons
		One or more digits entry
		Reset
		Record (on the remote control press A and simultaneously)
		One Touch Recording (instant recording), on the remote control press A and simultaneously
		Stereo/Mono/Language 1-2/Audio-Mix selector
		Tape speed selector (Short Play/Long Play)
		Recording mode selector
		TIMER programming
		Function select
		Tape length selector
		Time used, time left or tape counter selector
		Headphone volume control
		Headphone socket
		Audio recording level
		Picture sharpness control
		Variable play speed on/off
		Variable play speed selector

TV/VCR

and symbol"/>

Rear side of the video recorder:

With suitable TV sets the following functions are available (set the TV/VCR switch to 'TV').

Personal preference button

TV volume up

TV volume down

- Description of the system used for publishing modification data and supplements to the Service Manual.

All modification data and supplements to the Service Manual are published by means of Service Information bulletins.

Each Service information has a number, for example:

Example

VR 90 01 GB — Language
 — Sequence number
 — Year
 — Video cassette recorder

A Service Information bulletin consists of a yellow front sheet, as the case may be followed by supplementary and/or replacement sheets.

Replacement sheets serve to replace existing sheets in the Service Manual. These sheets are identified by an additional letter after the page number, for example 5-1a. Page 5-1a then takes the place of page 5-1.

Supplementary sheets are inserted between the existing sheets in the Service Manual. These sheets can be identified by an additional figure following the page number, for example 5-1-1.

Sheet 5-1-1 should be inserted after page 5-1.

Each Service Information is accompanied by an updated list of contents per page.

For each page added or each page replaced the list of contents indicates with which service information the relevant page has been published.

- Description of the system by means of which modifications are indicated in the recorder.

All important parts of the recorder, such as tape deck, p.c. boards and modules, are provided with a sticker. These stickers specify a number of product data. The meaning of this data will now be explained for the most important sections.

● The complete recorder

Type plate

The type plate is located at the back of the recorder.

Below an example of such a type plate is given.

TYPE
220V ~ 50Hz 16 W
WD 03 9007 000000

— Serial number
 — Production date
 — Change code
 — Production centre

Note:

- In the case of an important modification to the recorder the production code on the type plate is increased by one. E.g. 00 becomes 01.

● Tape deck

Location of the sticker: to the inside of the left raised border of the mounting plate.

Example

JDM 2-0 0855.2 — Factory code number
 1-1 05 WD02 — Production code
 016 000 11993 — Serial number
 — Production week

Note:

The production code and the serial number on the tape deck need not correspond to the production code and the serial number on the type plate.

● Printed panels

The stickers are generally located on the track side of the module.

Example

3103 198 5616.1 — Factory code number
 JFB 107 WD 915 — Production week
 — Production centre
 — Production status

Remarks:

- The production status number will not always be mentioned.
- In case of an important modification, the last figure of the factory code number (point number) is increased by one. E.g. 5616.1 becomes 5616.2.

SERVICE TEST PROGRAMME

2.1. Introduction

In the software programme $\mu\text{C 7354 (8052)}$, a service test programme has been recorded on JFBU/DE. The service test programme is divided into five modes of operation:

- Checking the tape deck functions
- Checking the sensors in the tape deck + indication of mask number of the deck software
- Elapsed time indicator
- Indicator of mask number of service and control software
- Fatigue test

2.2. Calling up the Service Test Programme

The service test programme is called up by simultaneously pressing the 'STOP' button on the remote control and the 'PLAY' button on the equipment for at least 5 secs. On the display there then appears, in place of the tape counter reading, information about the first mode of operation of the service test programme. This can be changed to the next respective mode of service operation by pressing the 'TIMER' button on the equipment. The

service test programme may be called up in any operational state of the equipment, with the exception of station finding. During service mode the equipment remains fully operational in all tape deck functions. The test programme is switched off by pressing the 'STAND-BY' button or by disconnecting the equipment at the mains.

2.3. Checking the Tape Deck Functions

2.3.1. Time Required for Winding and Unwinding

For this check, the signals from the switches SWA, SWB and SWC, which are to be found in the tape deck, are taken as the reference points. The signals SWA and SWB from the 'mode select switch' detect the winding or unwinding position. The signal SWC indicates the position of the cassette when loading ('frontloading') or unloading ('EJECT').

Fig. 2.1. shows the sequence in which the switches close.

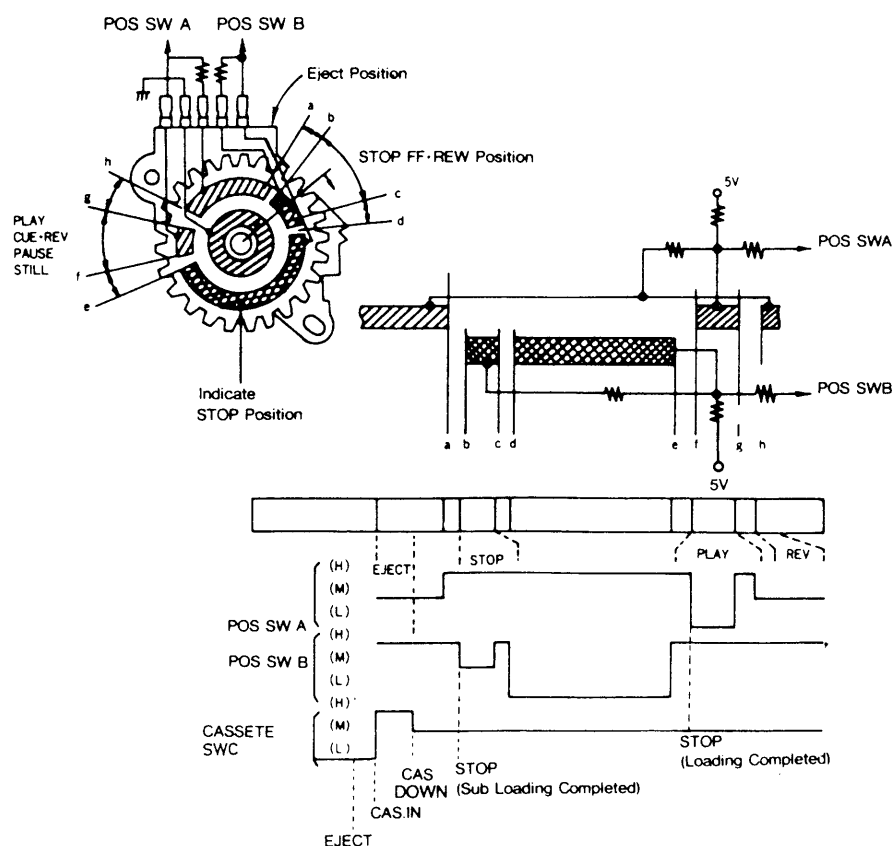


Fig 2.1

When the three switches are closed, a voltage level corresponding to the respective position of the switch is obtained by addition at the output Pin 7 of IC 7350-B. This voltage level is presented to IC 7352 at Pin 12. The signals SEL 0 and SEL 1 switch this voltage level through to Pin 7 of IC 7353-C. At Pin 6 of IC 7353-C there is a ramp voltage which is produced by an RC-network and a discharge level IC 7353-A. This level is controlled by the 'discharge' tube. By relating the ramp voltage (Pin 6 IC 7353-C) and the respectively conterminous d.c. voltage (Pin 7 IC 7353-C), a pulse occurs at the output (Pin 1 IC 7353-C), the length of which is a measure of the amount of d.c. voltage. As long as this pulse is 'high' then the 400kHz pulse from Pin 13 of IC 7353-D is passed on to Pin 15 of IC 7354 and counted by this latter. The number of these pulses is thus a measure of the d.c. voltage, which in its turn is a measure for the position of the three switches. Should the time provided be exceeded during winding, the lifting mechanism is once again brought into the 'eject' position. Should the time provided be exceeded during unwinding, then the equipment attempts to reach the 'stop' position and switches to the 'stand-by' position.

2.3.2.Failure of the Left or Right Winding Disk

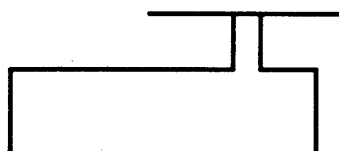
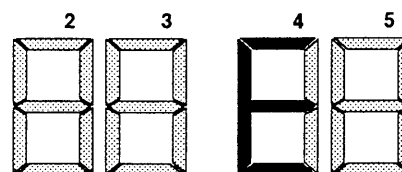
For checking this, the tacho signals from the left (WTAL) and right (WTAR) winding disks are taken as a reference point. Both signals are presented to IC 7351 and processed. These signals (WTALD, WTARD) are checked by IC 7354. If one or both of the signals are absent, the equipment switches to the 'stand-by' position.

2.3.3.Failure in the Head Wheel Motor

For checking this, the PG/FG signal is used. It is diverted into IC 7359 from the EMK of that tape spool of the head wheel motor through which no current is flowing and indicates the position of the head wheel. This signal is then transmitted to Pin 2 of IC 7354. If the PG/FG signal is not available, the equipment attempts to bring the lifting mechanism into the 'eject' position and switches to the 'stand-by' position.

2.3.4.Explanation of the Error Code

After calling up the service test programme, the data for checking the tape deck appear in four figures (--E-) in place of the tape counter reading. The first two figures indicate the status of the tape deck in which the error has occurred (see fig. 2.2.).



00	standby	17	stand by eject
01	eject on	18	record simulcast
02	stop	19	record audio
03	still	20	record dubbing
04	play	21	pause dubbing
05	tuner	24	record insert
06	record	28	super slow
07	play + tracking	29	play reverse x9
08	scan forward	30	play reverse x7
09	scan reverse	31	play reverse x5
10	wind	32	play reverse x3
11	rewind	33	play x3
12	pause	34	play x5
13	reverse	35	play x7
14	fast	36	play x9
15	slow	37	play x11
16	tuner eject	38	fixed tracking

Fig. 2.2

The last two figures indicate the type of error (see fig. 2.4.).

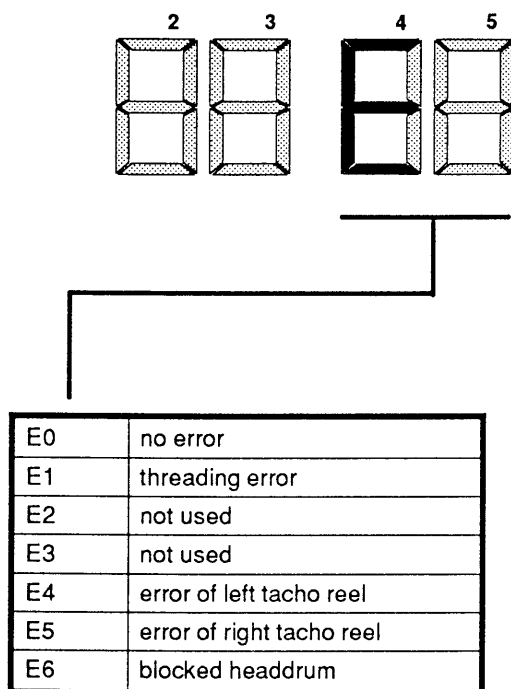
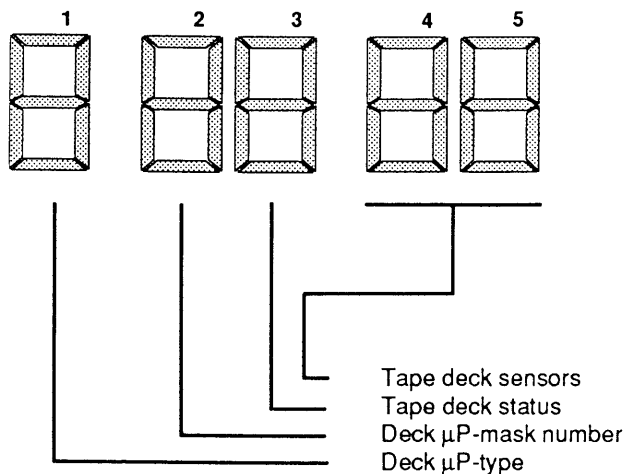


Fig 2.3

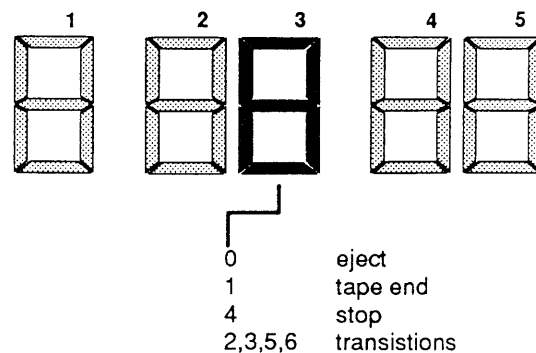
The last error code which occurred is stored in the TIMER BACKUP RAM and remains stored even if the equipment is disconnected from the mains. This error code can be erased by pressing the 'RESET' button in the service mode.

2.4. Checking the Sensors

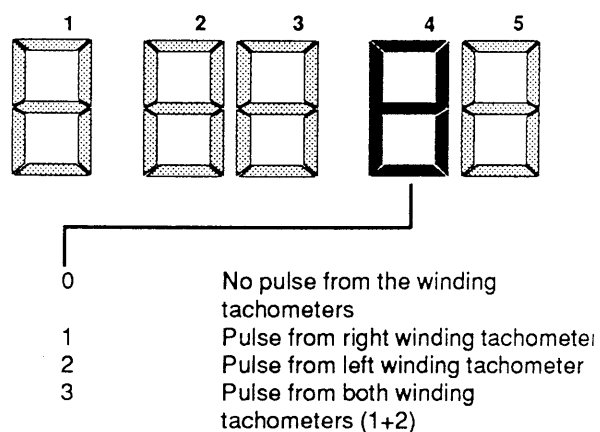
By pressing the 'TIMER' button once, one proceeds from the tape deck check to the sensor check. The indicator is in this case 5-figured.



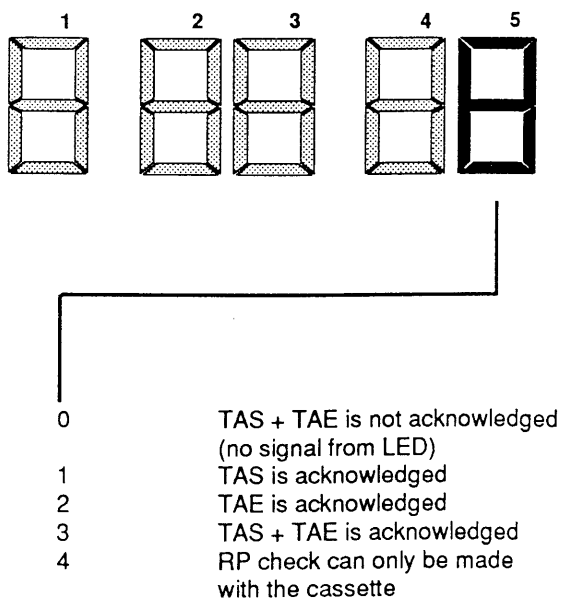
Tape deck status:



Tape deck sensors: (checking without cassette)

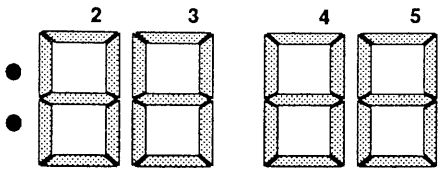


The information on the two tachometers is stored and can be erased by alternately switching from 'TUNER' to one of the tape deck functions.



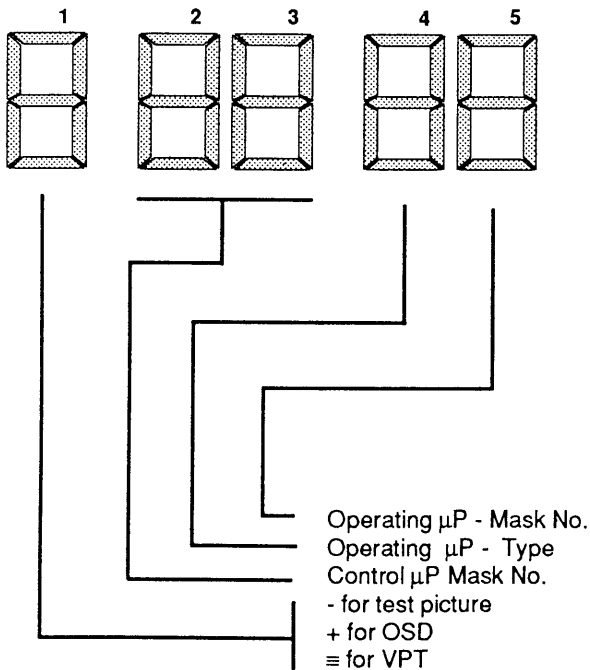
2.5. Elapsed Time Indicator

After calling up the service test programme, the elapsed time indicator can be activated by pressing the 'TIMER' button. It indicates how many hours the head disk has been rotating. This indicator is four-figured.



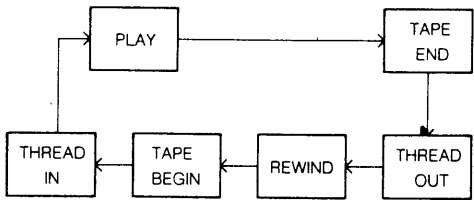
2.6. Indicator of the Mask Number of the Service and Test Software

This 'mode' is activated by pressing the 'TIMER' button several times. The indicator is here five-figured.



2.7. Fatigue Test

The equipment can also be subjected to a fatigue test in the service programme. For this, the equipment must be switched to one of the positions 'PLAY', 'REC' or 'REWIND'. The functions are then performed continuously. This check is designed to detect intermittent errors. The last error that occurred is stored in the TIMER BACKUP RAM (the error also remains stored after a mains failure). The fatigue test is ended by exiting from the service test programme.



PRS 05936
T02/917

REMOVAL OF CASE COMPONENTS AND SERVICE POSITIONS OF PRINTED CIRCUIT BOARDS

For tape deck information see the separate information leaflet G-Tape-Deck including service Information for VR 89-17.

1. The Case Lid

Removal:

- Unscrew the screws A, B, C, D, E and F (see fig. 1).
- Pull back the case lid by approx. 1 cm. When the side walls of the case lid are pushed outwards slightly, it can be taken off.

Mounting:

- Place the front groove of the case lid so that it is almost on the front panel. Installation is then carried out in reverse order to the above.

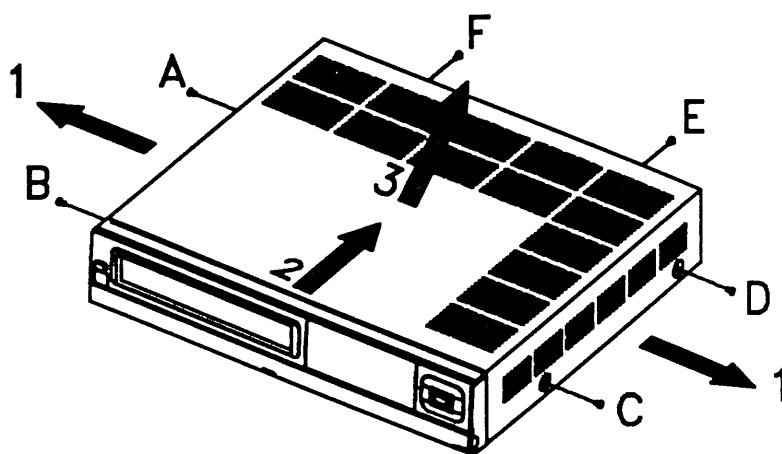


Fig. 1

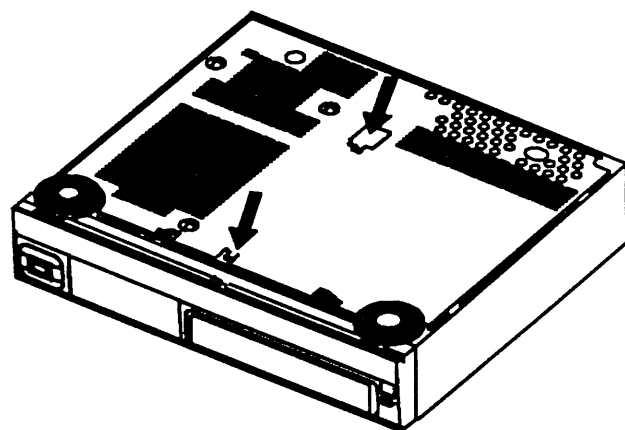


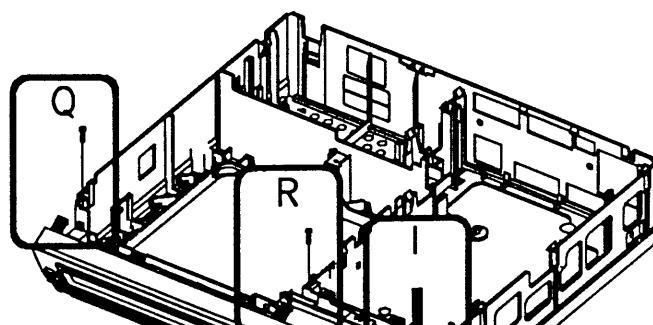
Fig. 2

2. The Floor Board

- Lay down the equipment with the underside facing upwards.
- The floor board can be removed by undoing the two clasps (see fig.2)

3. The Front Panel

- Remove the case lid (see Item 1).
- Unscrew screws Q, R and I (only for VR70) (see fig 3).
- With VR70, remove the volume and picture sharpness knobs.
- After undoing the 3 clasps (see fig. 3) the front panel can be folded forwards and removed.



Note:

- When mounting, the front panel must first be adjusted underneath to the five cams on the main housing.
- With VR70, the volume and picture sharpness knobs are put on again last of all, after the front panel has been mounted.

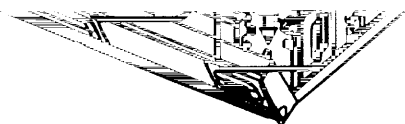


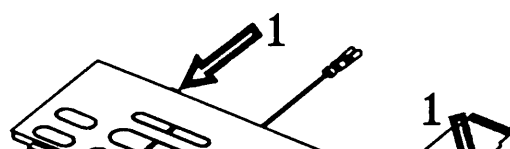
Fig. 3

first be
of the housing.
sharpness knobs
front panel has

4. Changing the Key Block in VR70

- Remove the front panel (see Item 3).

Unscrew the screws **K**, **L**, and **M** (see fig. 4).



- The socket mounting can be removed by pressing the rear wall backwards (see fig. 8).
- The JAF print board can be removed from the case by undoing the two clasps (see fig. 9).

8. JCO (Control Board)

- Removal of the family board as in Item 5, although without putting it into the service position, but placing it on the left instead.
- Now remove the control board and place it on the right beside the equipment.

9. JDC (Service Board)

- Remove the front panel (see Item 3).
- Unscrew screw 21
- The service board can be removed by undoing the clasps (see fig. 10).

Note:

The components beneath the indicator become accessible by undoing the 5 clasps of the indicator mounting.

10. Tape Deck

the service board (see fig. 10). ---

screws S, T and U (see fig. 11).

deck can now be removed whole from the

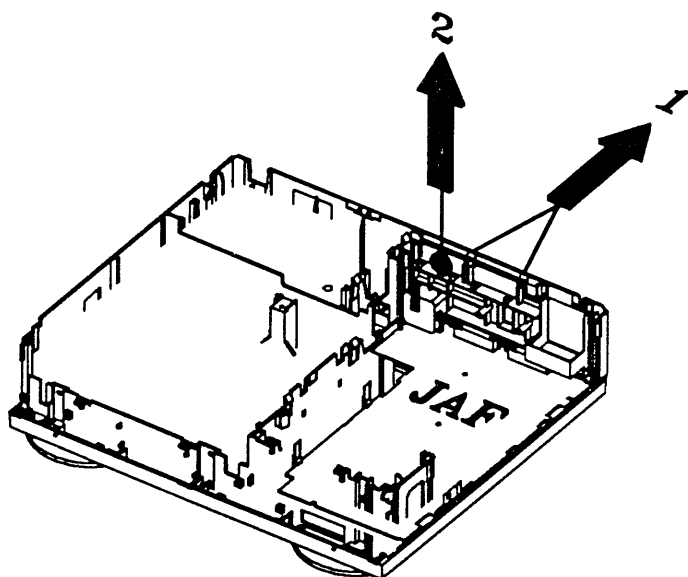


Fig. 8

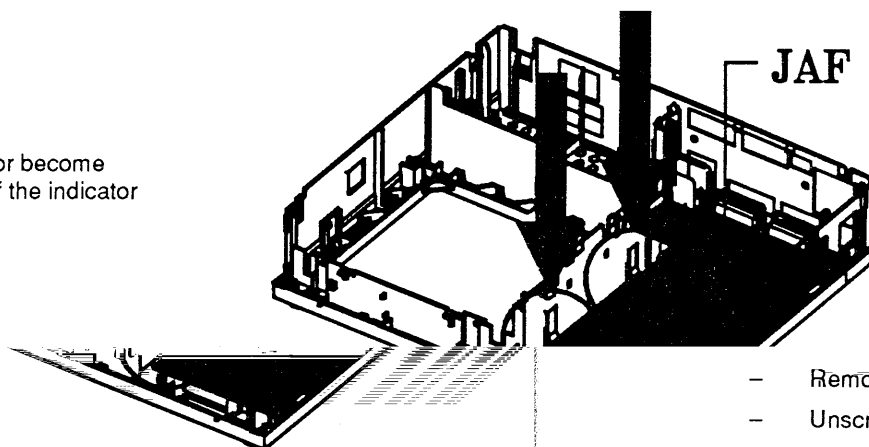


Fig. 9

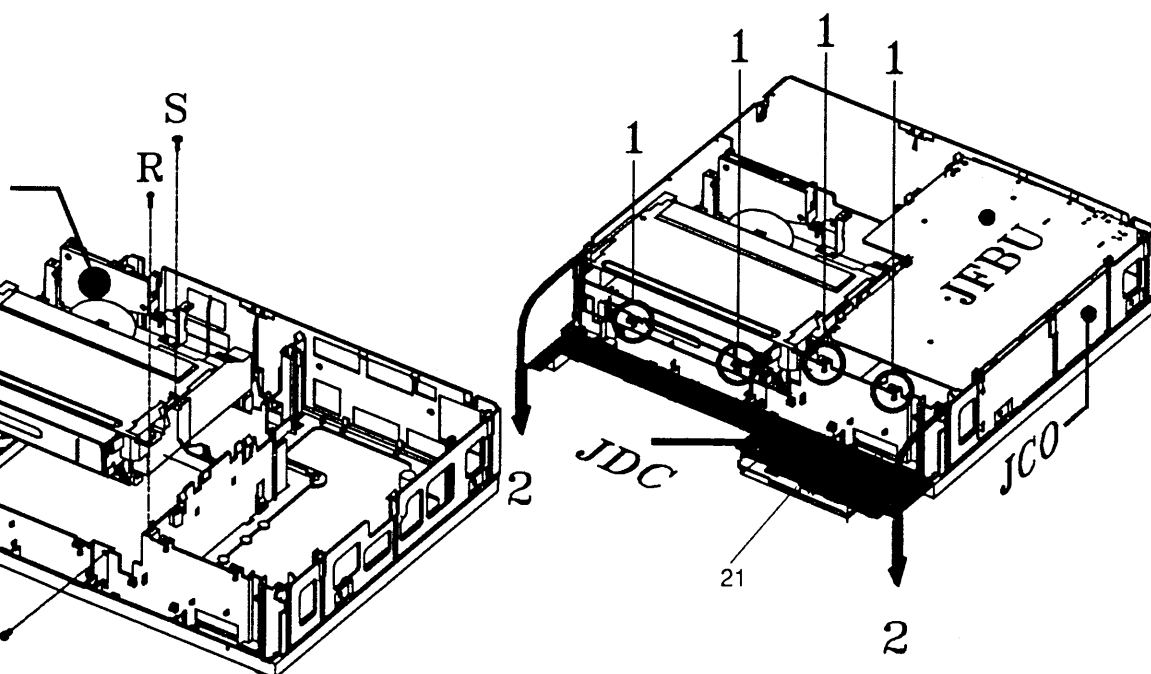
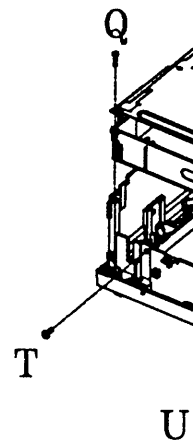


Fig. 10

Fig. 11

- Remove the
- Unscrew s
- The tape o
- housing.

HV4/2



Servicing of SMDs (Surface Mounted Devices)

1. General cautions on handling and storage.

- Oxidation on the SMDs terminals results in poor soldering. Do not handle SMDs with bare hands.
- Avoid for storage places that are sensitive to oxidation such as places with sulfur or chlorine gas, direct sunlight, high temperatures or a high degree of humidity.

As a result the capacitance or resistance value of the SMDs may be affected.

- Rough handling of circuit boards containing SMDs may cause damage to the components as well as the circuit boards. Circuit boards containing SMDs should never be bent or flexed. Different circuit board materials expand and contract at different rates when heated or cooled and the components and/or solder connections may be damaged due to the stress. Never rub or scrape chip components as this may cause the value of the component to change. Similarly, do not slide the circuit board across any surface.

2. Removal of SMDs

- Heat the solder (for 2–3 seconds) at each terminal of the chip. Small components can, by means of litz wire and a limited horizontal force, be removed with the soldering iron. They can also be removed with a solder sucker (see Fig. 2a) or
- While holding the SMD with a pair of tweezers take it off gently using the soldering iron's heat applied to each terminal (see Fig. 2b).
- Remove the excess solder on the solder lands by means of litz wire or a solder sucker (see Fig. 2c).

Caution on removal:

- When handling the soldering iron, use suitable pressure and be careful.
- When removing the chip, do not use undue force with the pair of tweezers.
- The soldering iron to be used (approx. 30 W), must preferably be provided with a thermal control (soldering temperature about 225 to 250°C).
- The chip, once removed, must **never** be used again.

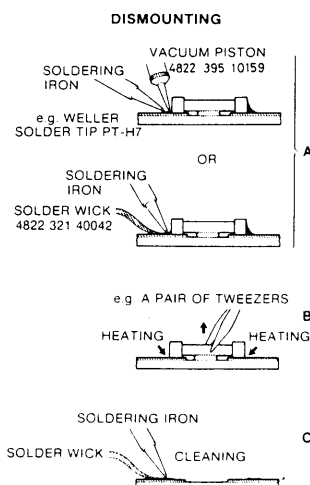


Fig. 2

43 757 A11

3. Attachment of SMDs

- Locate the SMD on the solder lands by means of tweezers and solder the component at one side. Ensure that the component is positioned well on the solder lands (see Fig. 3a).
- Next complete the soldering of the terminals of the component (see Fig. 3b).

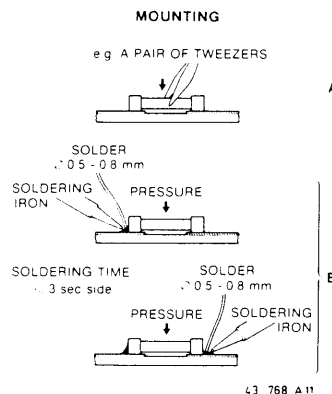


Fig. 3

Caution on attachment:

- When soldering the SMD terminals, do not touch them directly with the soldering iron. The soldering must be as quick as possible; care must be taken to avoid damage to the terminals and the body itself.
- Keep the SMD's body in contact with the printed board when soldering.
- The soldering iron to be used (approx. 30 W) must preferably be provided with a thermal control (soldering temperature about 225 to 250°C).
- Soldering should not be done outside the solder land.
- Soldering flux (of rosin) may be used but should not be acidic.
- After soldering, let the SMD cool down gradually at room temperature.
- The quantity of solder must be proportional with the size of the solder land. If the quantity is too great, the SMD might crack or the solder lands might be torn loose from the printed board (see Fig. 4).

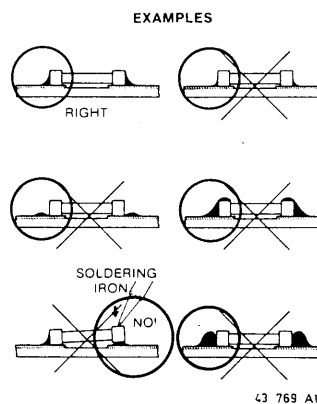
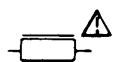
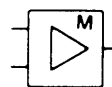


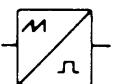
Fig. 4



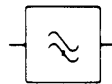
Safety resistor
Veiligheidsweerstand
Sicherheitswiderstand
Résistance de sécurité
Resistencia de seguridad
Resistenza i sicurezza



Mixer stage
Mengtrap
Mischstufe
Etage mélangeur
Mezclador
Stadio miscelatore



Sawtooth pulse converter
Zaagtand-puls omzetter
Sägezahn Impulsumformer
Convertisseur d'impulsions en dents de scie
Convertidor de impulsos en diente de sierra
Convertitore a dente di sega



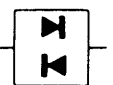
High-pass filter
Hoog-doorlatend filter
Hochpassfilter
Filtre passe-haut
Filtro pasa-alto
Filtro passa-alto



Sync separator
Sync scheider
Séparateur sync
Separador de sincronismos
Separatore dei sincronismi



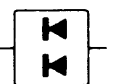
HF generator
HF generator
HF-Generator
Générateur HF
Generador de RF
Generatore A.F.



FM detector
FM detector
FM-Detektor
Décteur FM
Detector de FM
Rivelatore FM



Sawtooth generator
Zaagtandgenerator
Sägezahn-generator
Générateur de dents de scie
Generador diente de sierra
Generatore di dente disega



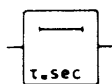
Phase discriminator
Fasediscriminator
Phasenvergleich
Discriminateur de phase
Dicriminador de fase
Discriminatore di fase



Square wave generator
Puls-generator
Rechteckgenerator
Générateur d'impulsions rectangulaires
Generador de onda cuadrada
Generatore di onda quadra



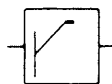
Detector
Detector
Detektor
Décteur
Detector
Rivelatore



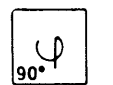
Delay element
Vertragingselement
Verzögerungselement
Elément à retard
Elemento de retardo
Linea di ritardo



Level detector
Niveau detector
Niveau-Detektor
Décteur de niveau
Detector de nivel
Rivelatore di livello



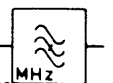
Limiter
Begrenzer
Begrenzer
Limiteur
Limitador
Limitatore



Phase-changing network
Faseverschuiver
Phasenverschiebung
Circuit de déphasage
Circuito de cambio de fase
Circuito sfasatore



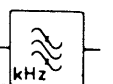
Positive-going step function
Positieve flank
Übergang von tief zu hoch
Fonction de palier en sens positif
Flanco de subida positivo
Abilitazione durante il fronte di salita



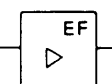
Rejection filter
Bandsperrfilter
Bandsperrfilter
Filtre de suppression
Filtro supresor
Filtro soppressore



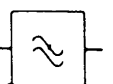
Negative-going step function
Negatieve flank
Übergang von hoch zu tief
Fonction de palier en sens négatif
Flanco de bajada negativo
Abilitazione durante il fronte di discesa



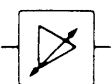
Bandpass filter
Band-doorlatend filter
Bandpassfilter
Filtre passe-bande
Filtro pasa-banda
Filtro passa-banda



Emitter follower
Emitter volger
Emitter folger
Emetteur suiveur
Seguidor de emisor
Inseguitore d'emittitore



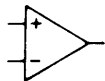
Low-pass filter
Laag-doorlatend filter
Tiefpassfilter
Filtre passe-bas
Filtro pasa-bajos
Filtro passa-basso



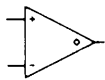
Automatically controlled amplifier
Automatische gestuurde versterker
Automatisch gesteuerter Verstärker
Amplificateur à commande automatique
Amplificador de control automático
Amplificatore autocontrollato



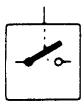
Amplifier
Versterker
Verstärker
Ampli.
Amplificador
Amplificatore



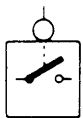
Differential amplifier
Verschilversterker
Differentialverstärker
Ampli différentiel
Amplificador diferencial
Amplificatore differenziale



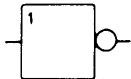
Amplifier with open output
Versterker met open uitgang
Verstärker mit offenem Ausgang
Ampli a sortie ouverte
Amplificador de salida abierta
Amplificatore con uscita aperta



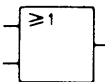
Electronic switch
Electronische schakelaar
Electronische Schalter
Commutateur électronique
Conmutador electrónico
Interruttore elettronico



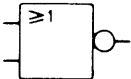
Electronic switch
Electronische schakelaar
Electronische Schalter
Commutateur électronique
Conmutador electrónico
Interruttore elettronico



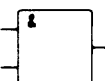
Inverter
Inverter
Inverter
Invertisseur
Inversor
Invertitore



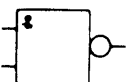
	A	B	x
Or gate	0	0	0
Of-poort	0	1	1
Oder	1	0	1
Porte ou	1	1	1
Puerta or			
Porta or			



	A	B	x
Nor gate	0	0	1
"Nor"	0	1	0
"Nor"	1	0	0
Porte Non-ou	1	1	0
Puerta nor			
Porta nor			



	A	B	x
And gate	0	0	0
En-poort	0	1	0
Und Gatter	1	0	0
Porte Et	1	1	1
Puerta and			
Porta and			



	A	B	x
Nand gate	0	0	1
"Nand"	0	1	1
"Nand"	1	0	1
Porte "Non-Et"	1	1	0
Puerta nand			
Porta nand			

Common control block
Gemeenschappelijk controleblok
Gemeinschaftlicher Kontrolleblock
Bloc de contrôle commun
Bloque de control común
Sezione di controllo comune

SRG Shift register
Schuif register
Schieberegister
Registre à décalage
Registro de desplazamiento
Registro di scorrimento

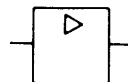
Q Output
Uitgang
Ausgang
Sortie
Salida
Uscita

Open collector output
Open kollektor uitgang
Offenen Kollektor Ausgang
Sortie collecteur ouvert
Salida de colector abierto
Uscita a collettore aperto

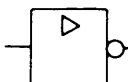
G Command input
Kommando ingang
Kommando eingang
Entrée ordres
Entrada de órdenes
Comando di ingresso

CE Chip enable input
Chip enable ingang
Chip enable eingang
Entrée chip validation
Entrada de validación del chip
Abilitazione ingresso dati

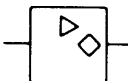
00 Bidirectional
Tweezijdig gevoelig
Doppelseitig empfindlich
Bidirectinel
Bidireccional
Bidirezionale



Buffer
Buffer
Puffer
Tampon
Buffer (Memoria intermedia)
Buffer



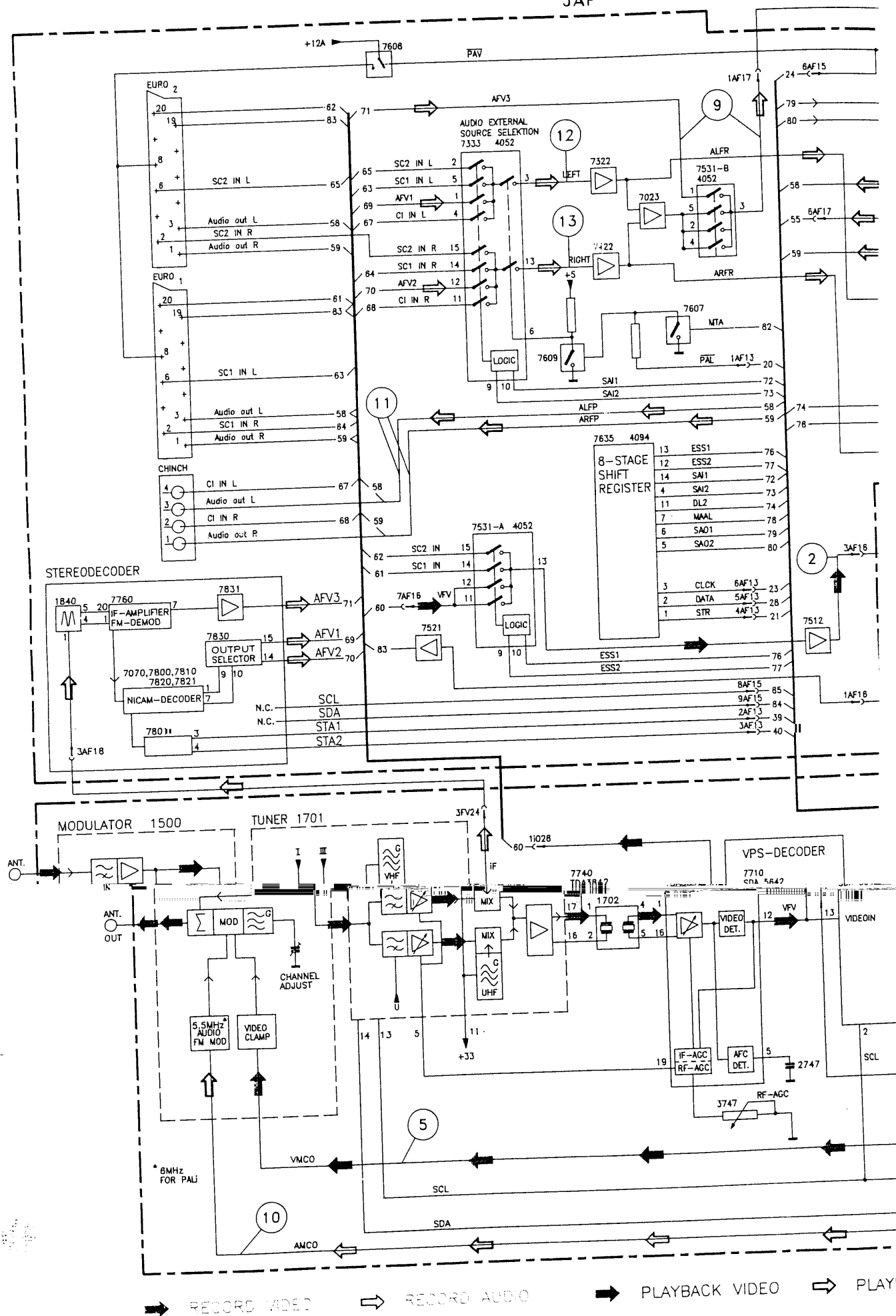
Inverting buffer
Inverterende buffer
Invertierende puffer
Tampon invertisseur
Buffer inversor
Buffer invertente

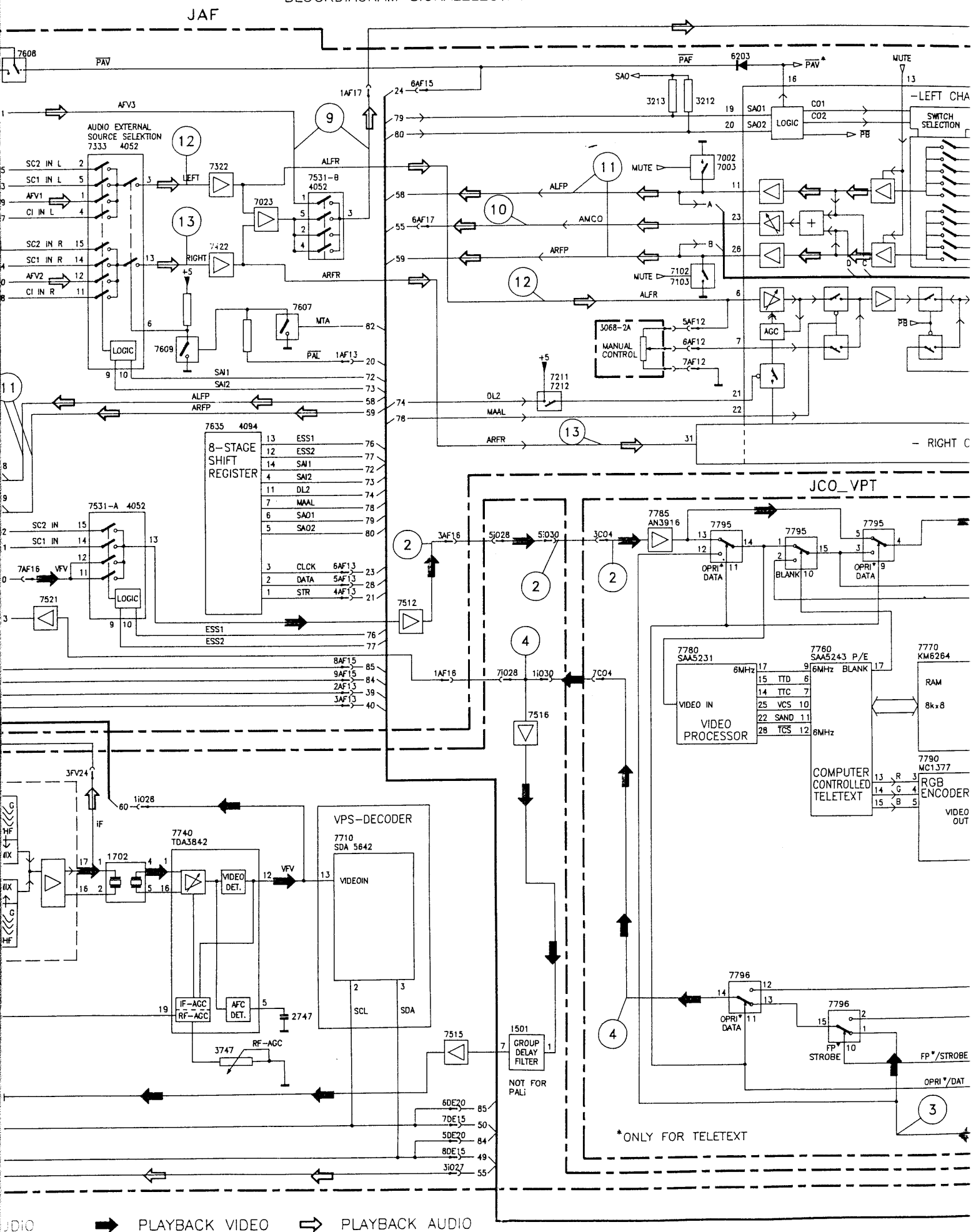


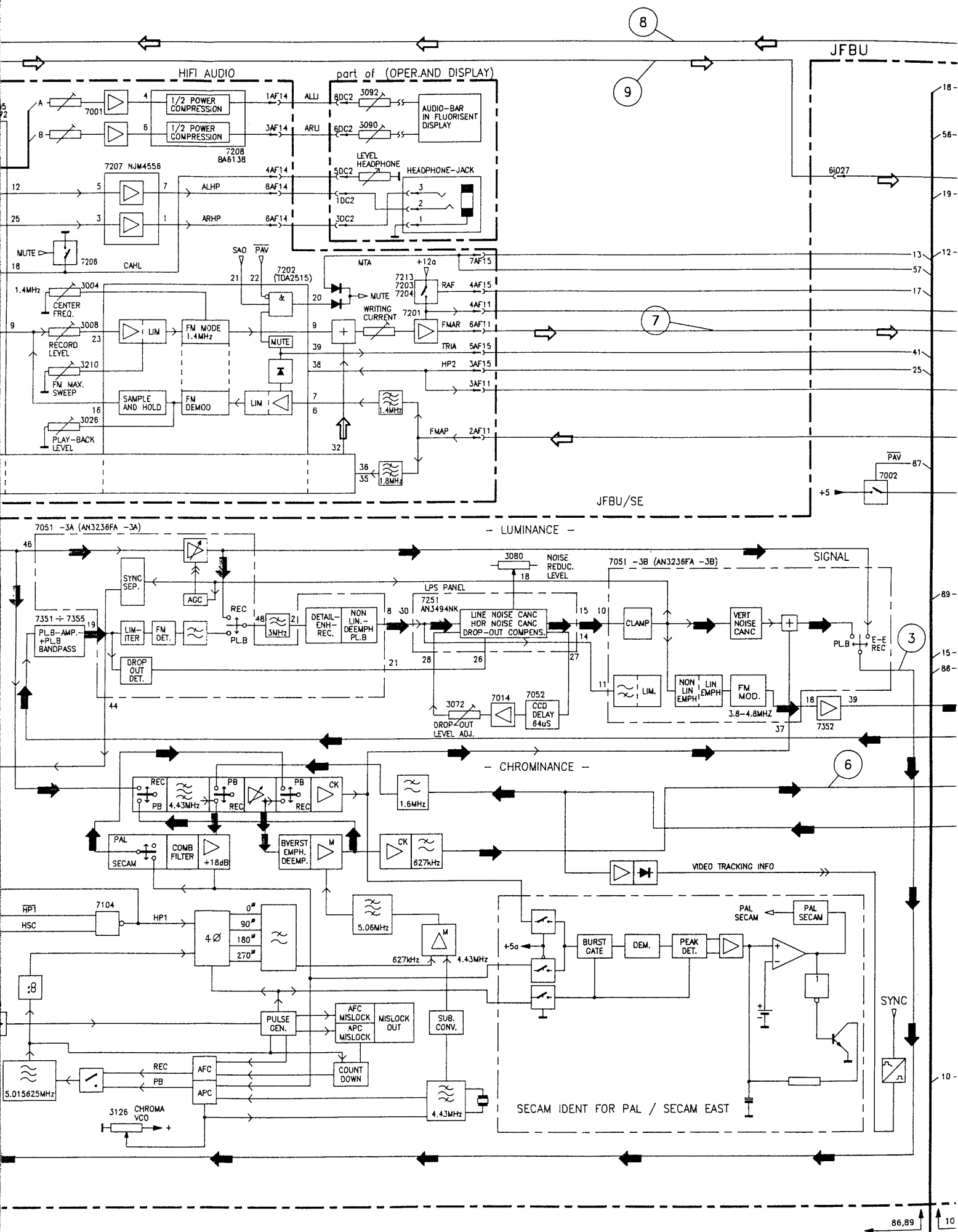
Buffer with open output
Buffer met open uitgang
Puffer mit offenem ausgang
Tampon à sortie ouverte
Buffer de salida abierta
Buffer con uscita aperta

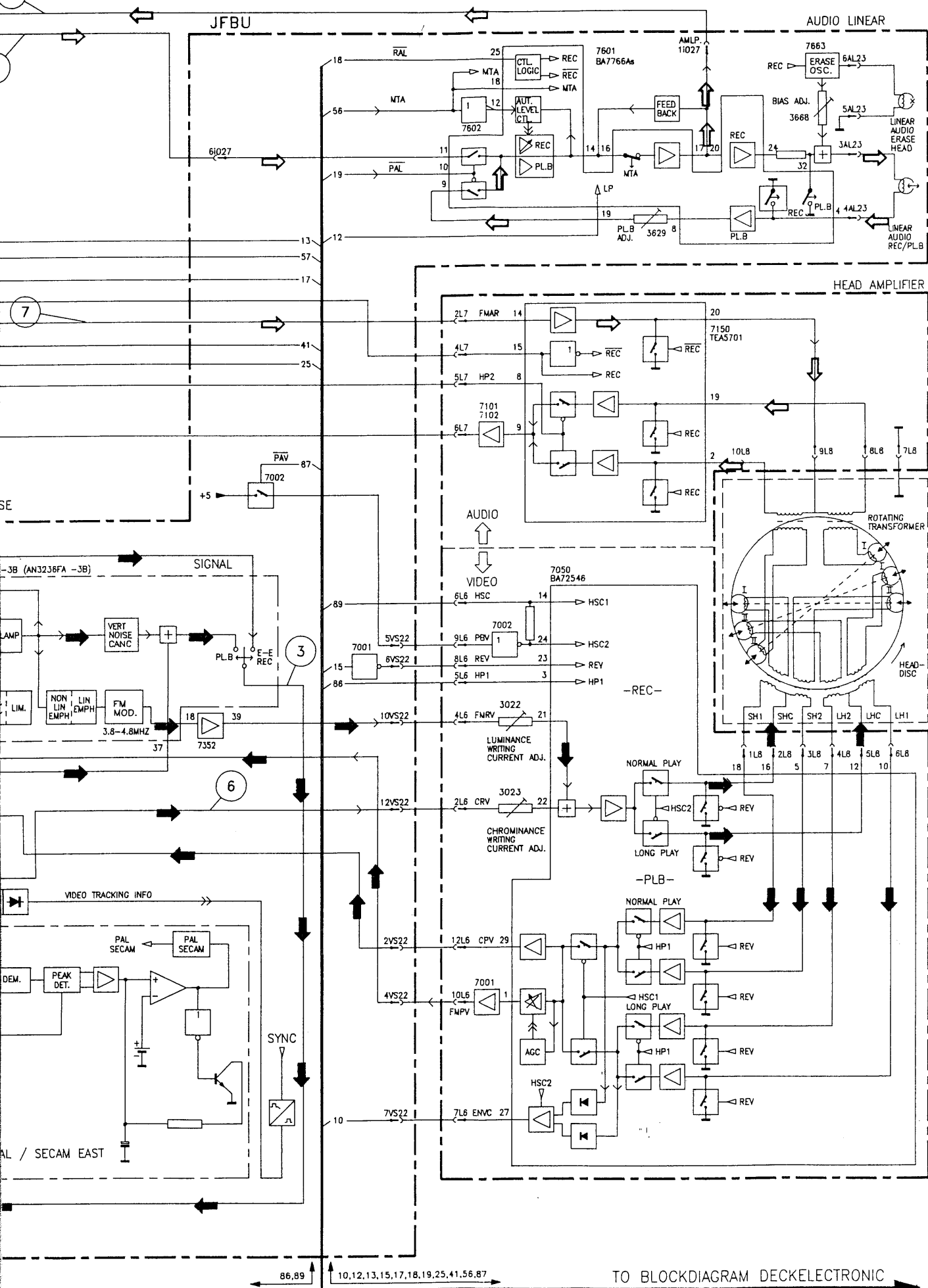
BLOCKDIAGRAM SIGNALELE

JAF







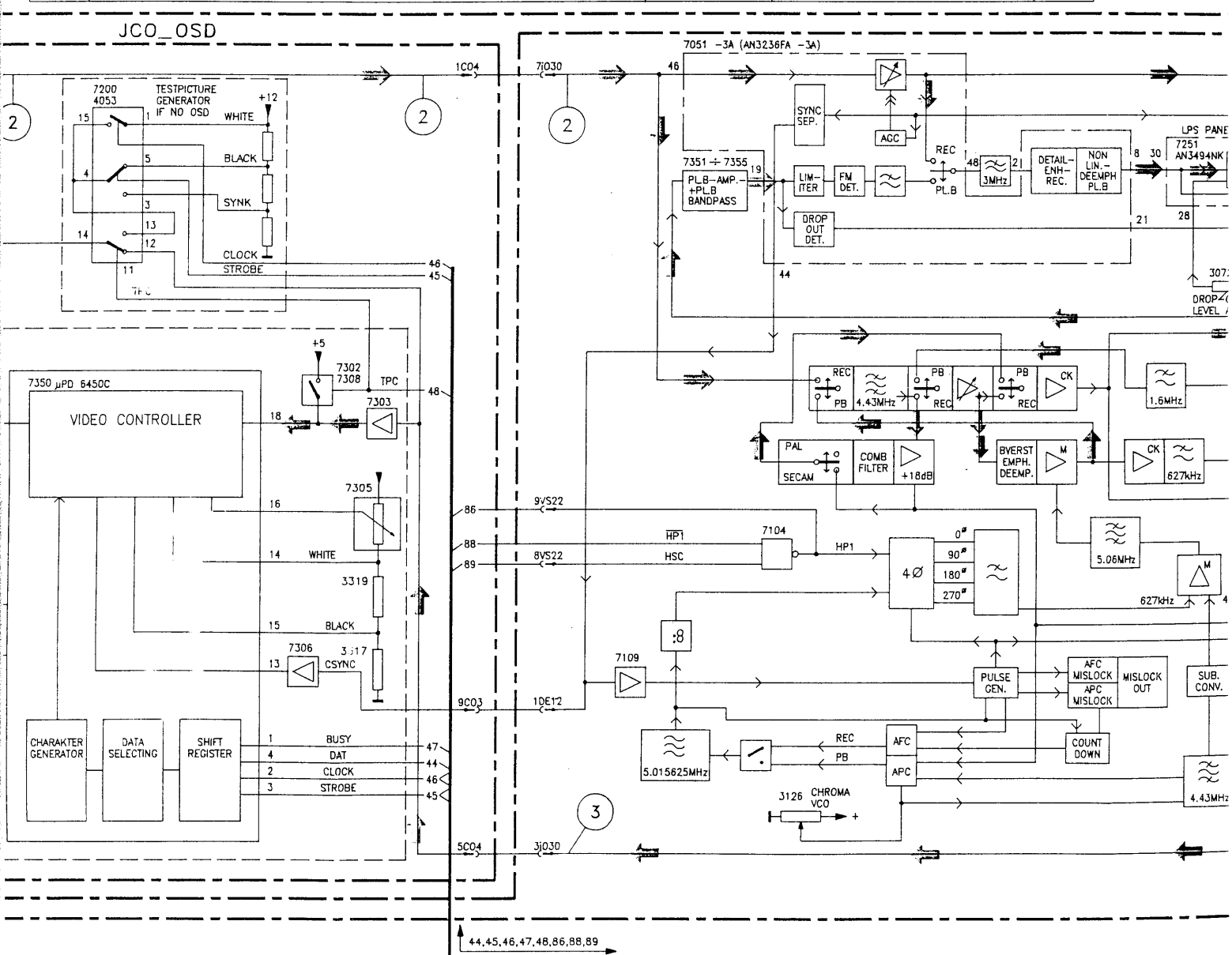
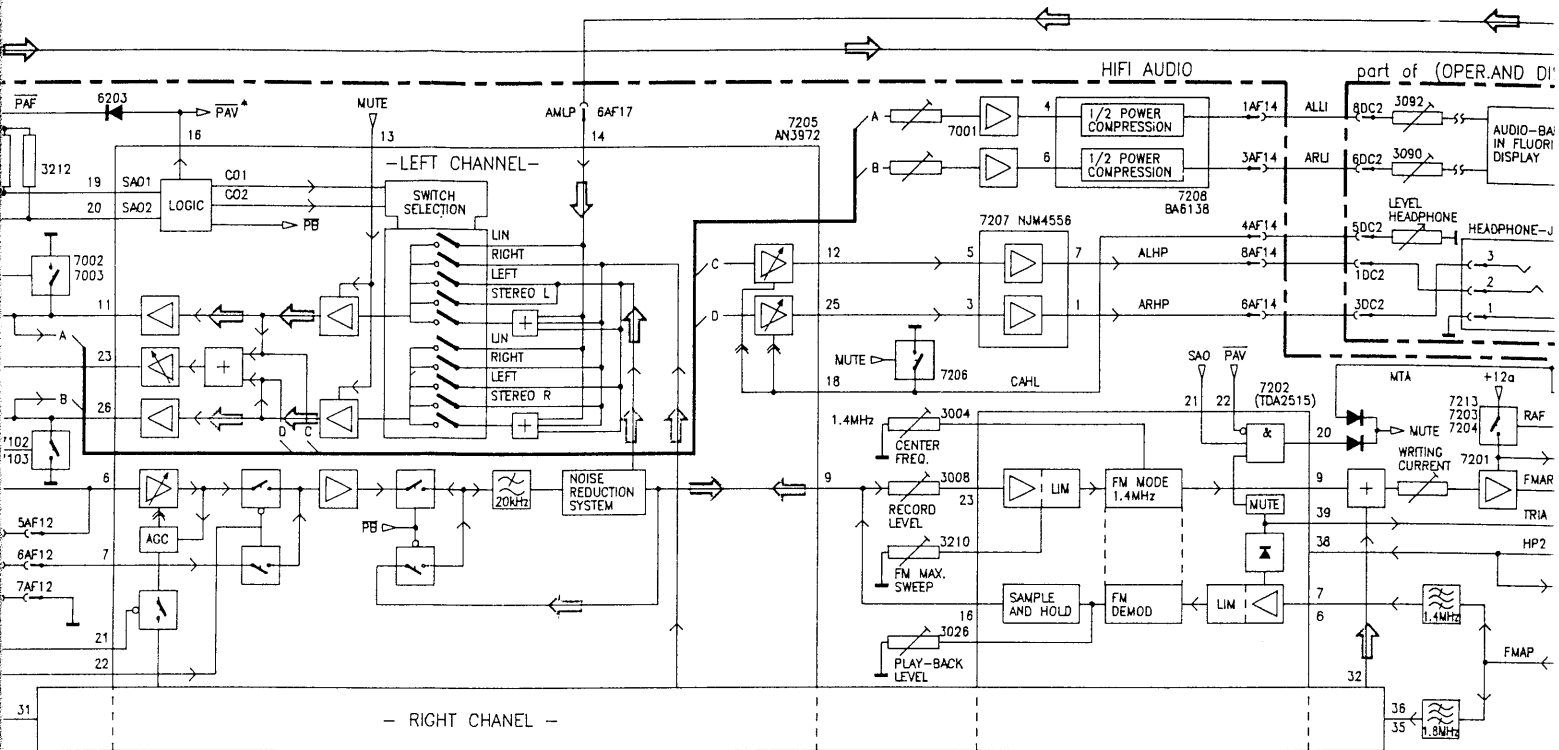


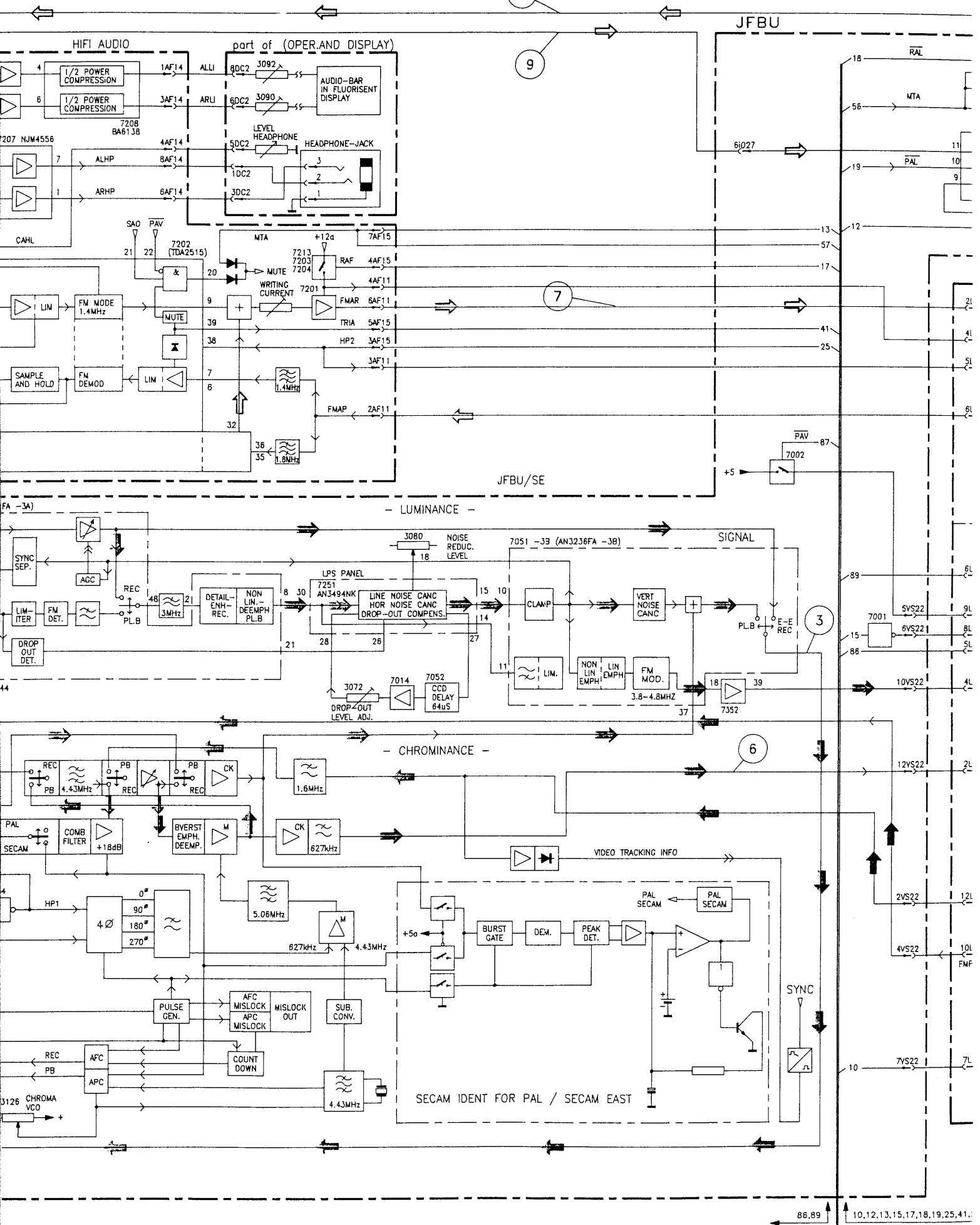


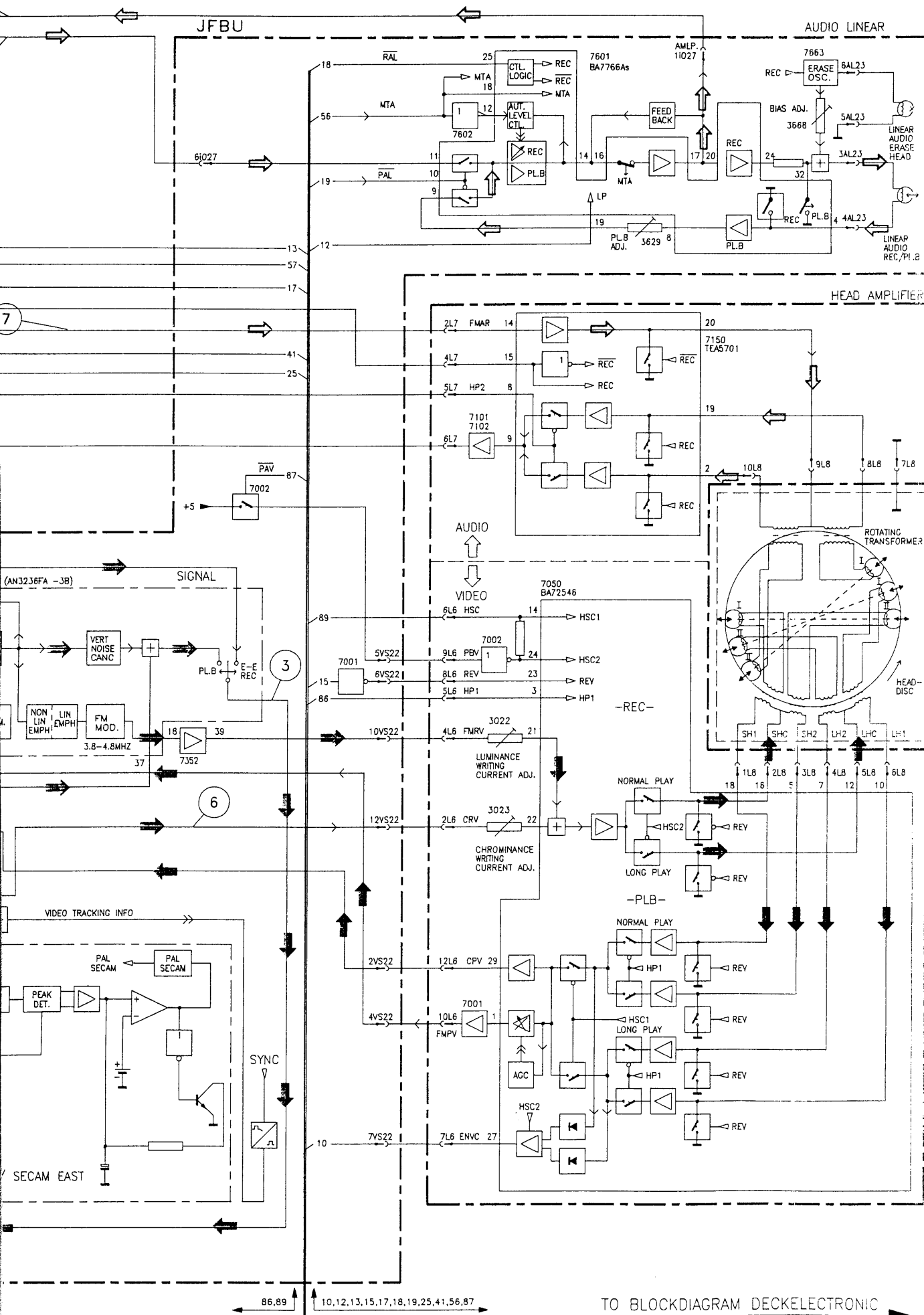
JAF



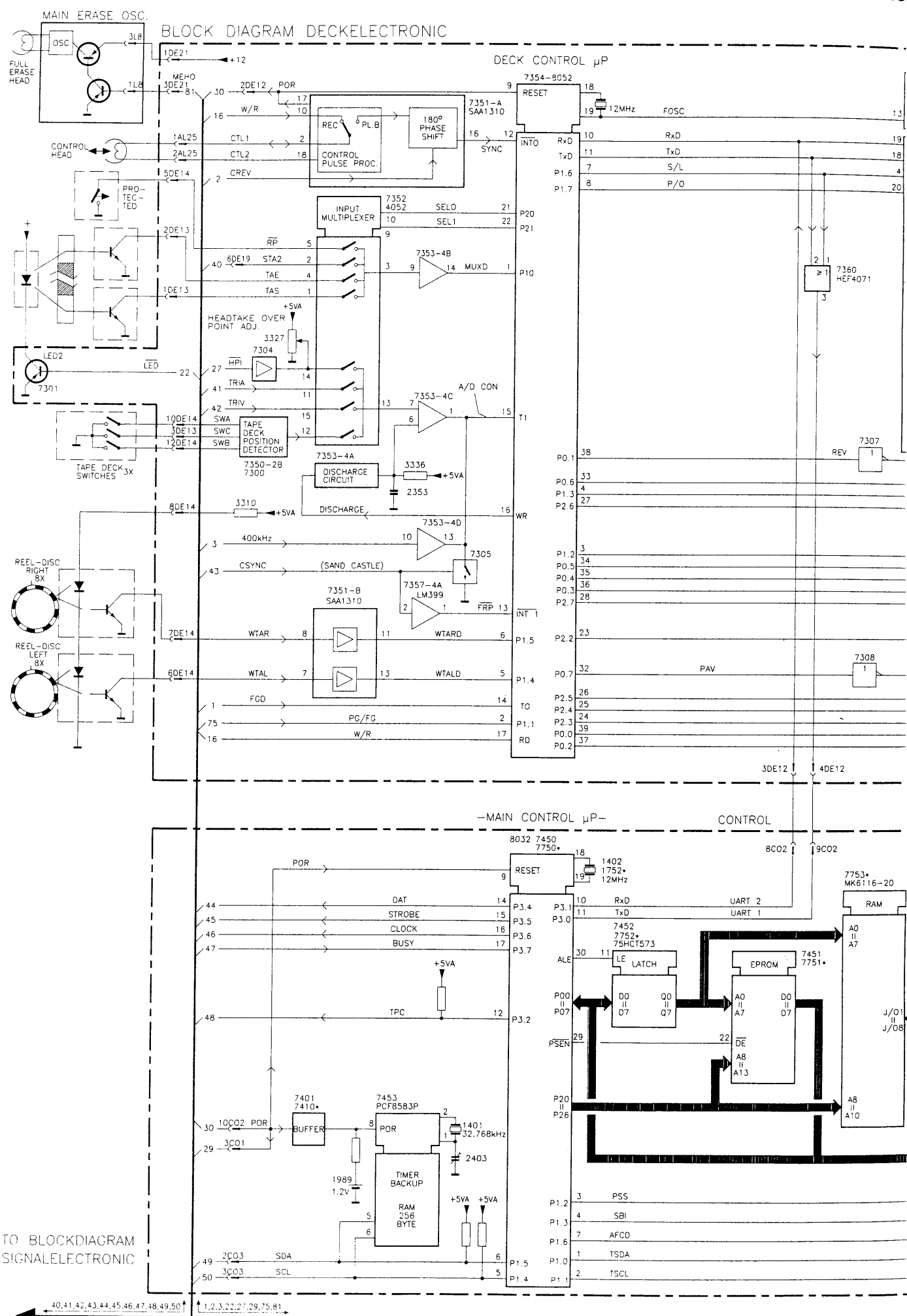
AUDIO → PLAYBACK VIDEO → PLAYBACK AUDIO

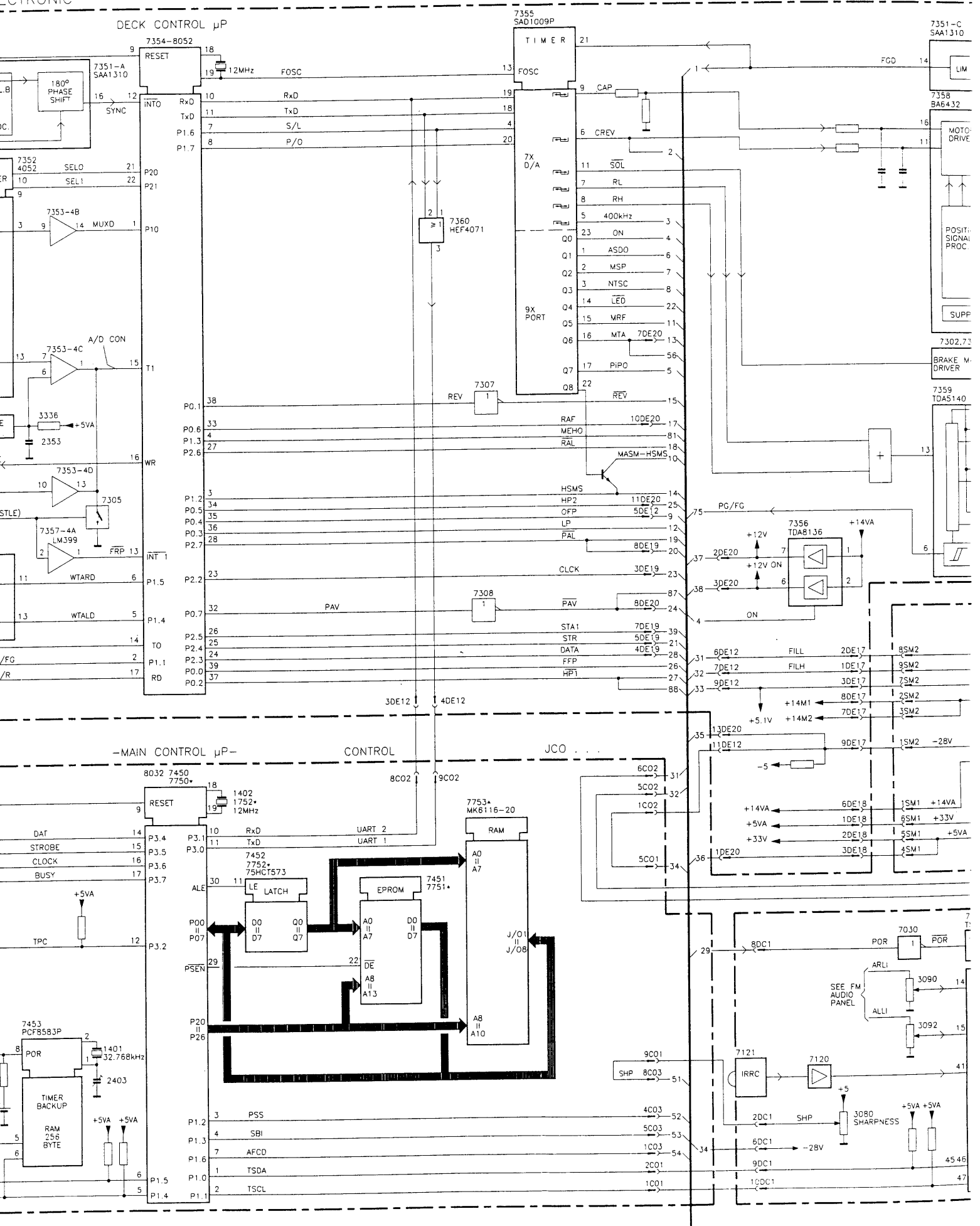




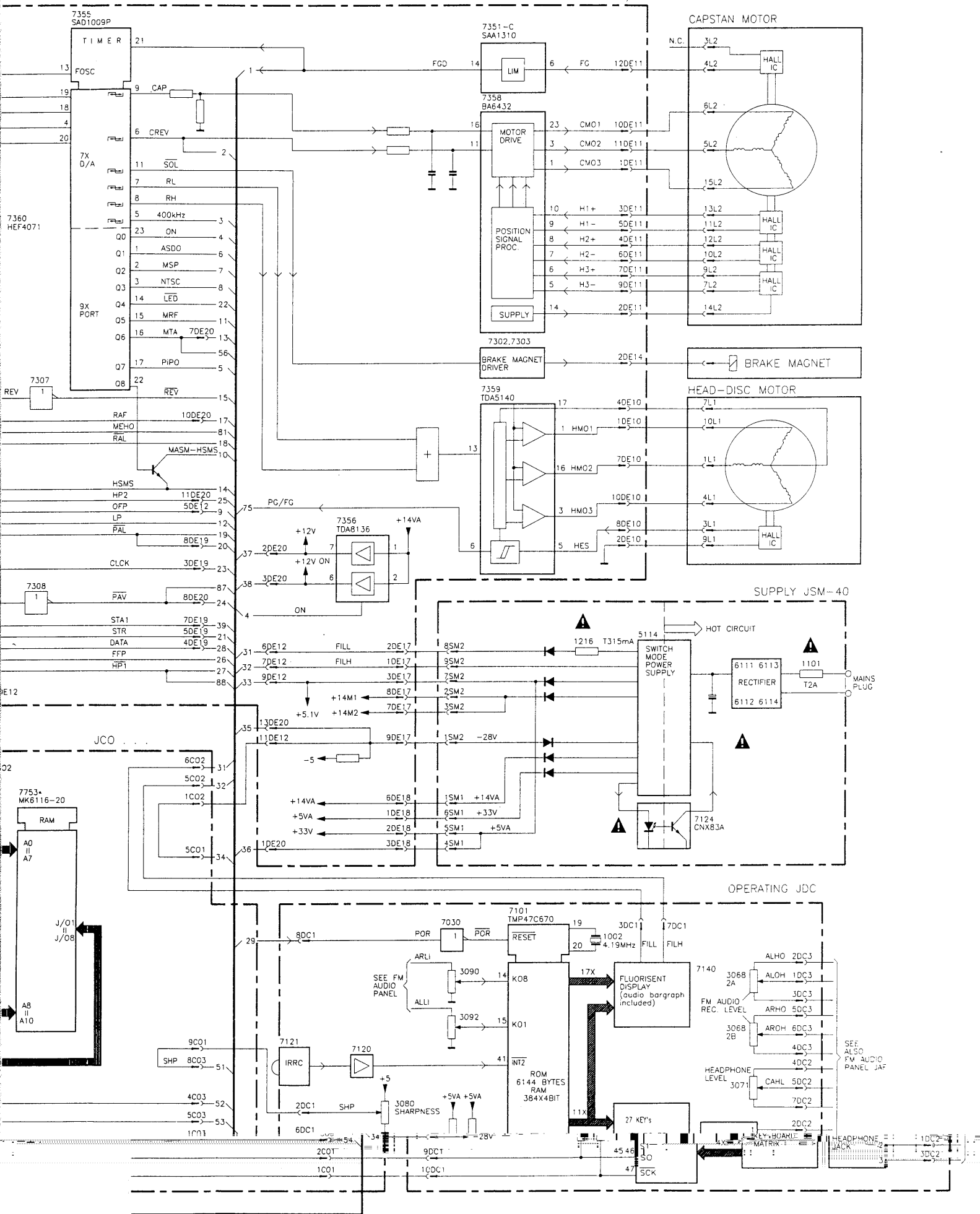


BLOCK DIAGRAM DECKELECTRONIC





DECK-ELECTRONICS JFB/DE



A: DC, 0.5 V/Div, 10us/Div
B: GND Reference

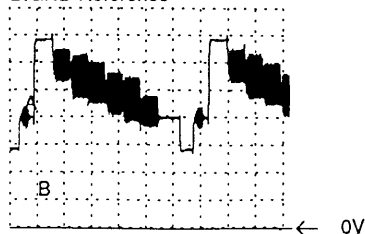


Fig. 1

A: DC, 0.1 V/Div, 5ms/Div

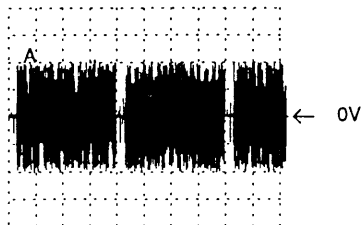


Fig. 6

A: AC, 0.5 V/Div, 0.2ms/Div

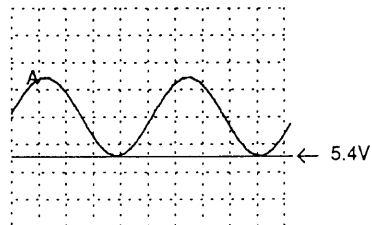


Fig. 11

A: AC, 0.2 V/Div, 10us/Div

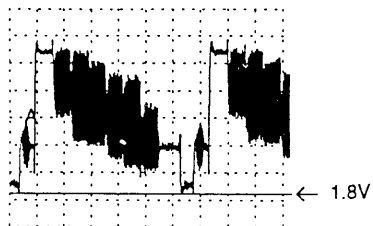


Fig. 2

A: DC, 0.1 V/Div, 20us/Div

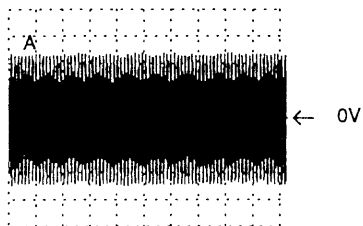


Fig. 7

A: DC, 0.5 V/Div, 0.5ms/Div
B: GND Reference

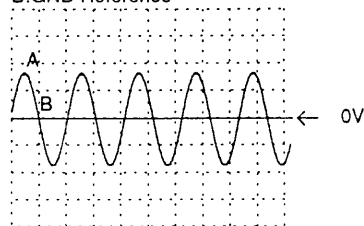


Fig. 12

A: DC, 0.5 V/Div, 10us/Div
B: GND Reference

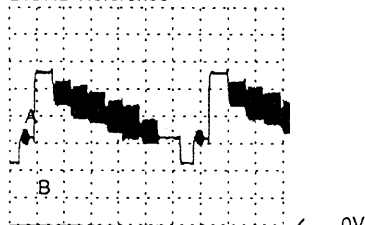


Fig. 3

A: DC, 0.5 V/Div, 0.5ms/Div
B: GND Reference

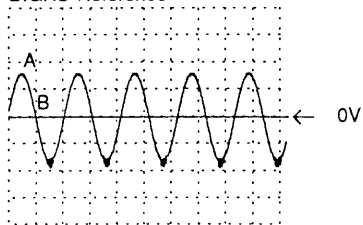


Fig. 8

A: DC, 0.5 V/Div, 0.5ms/Div
B: GND Reference

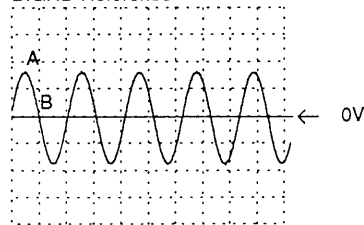


Fig. 13

A: AC, 0.5 V/Div, 10us/Div

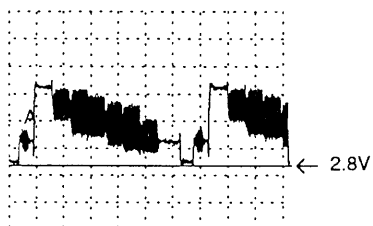


Fig. 4

A: DC, 0.2 V/Div, 0.5ms/Div
B: GND Reference

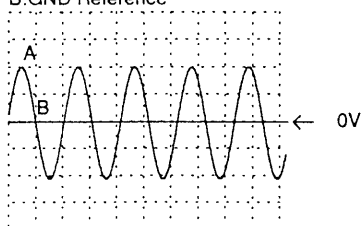


Fig. 9

A: AC, 0.2 V/Div, 10us/Div

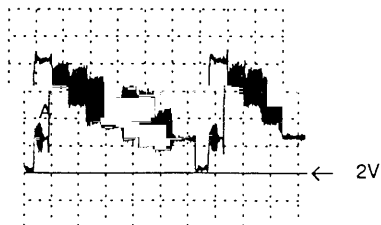


Fig. 5

A: DC, 0.2 V/Div, 0.2ms/Div

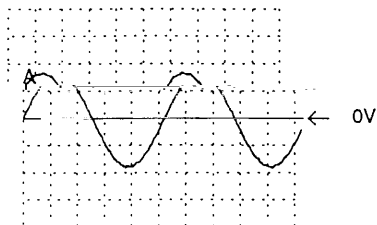
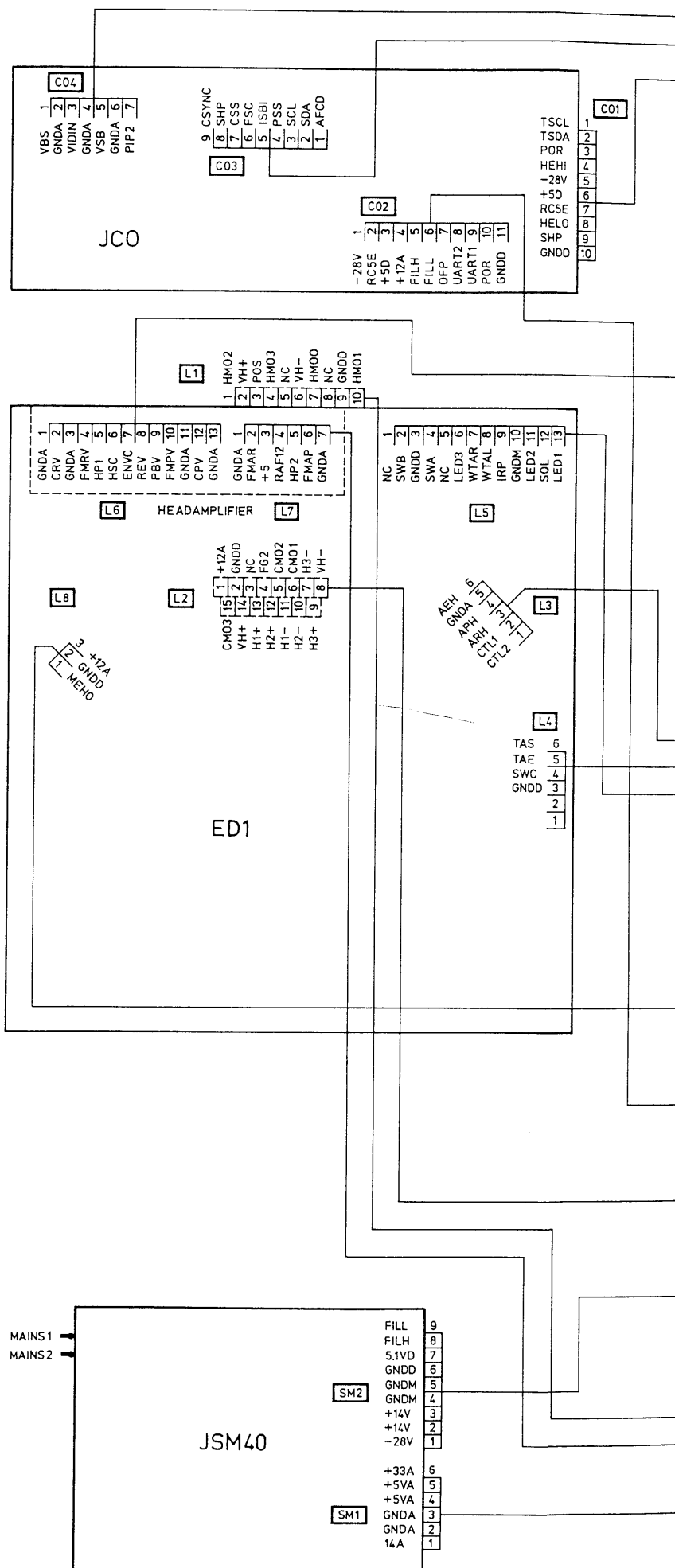
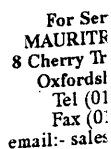
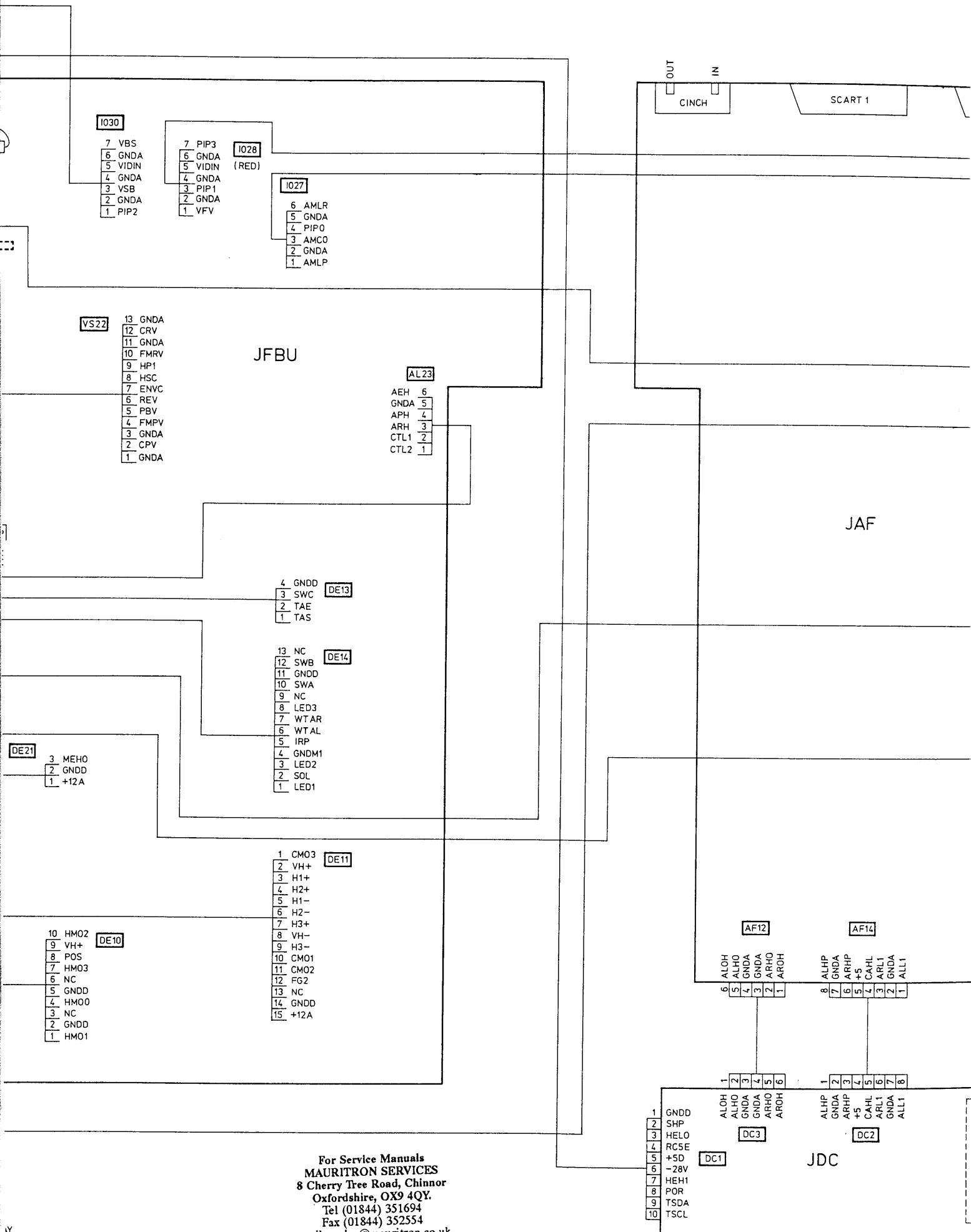


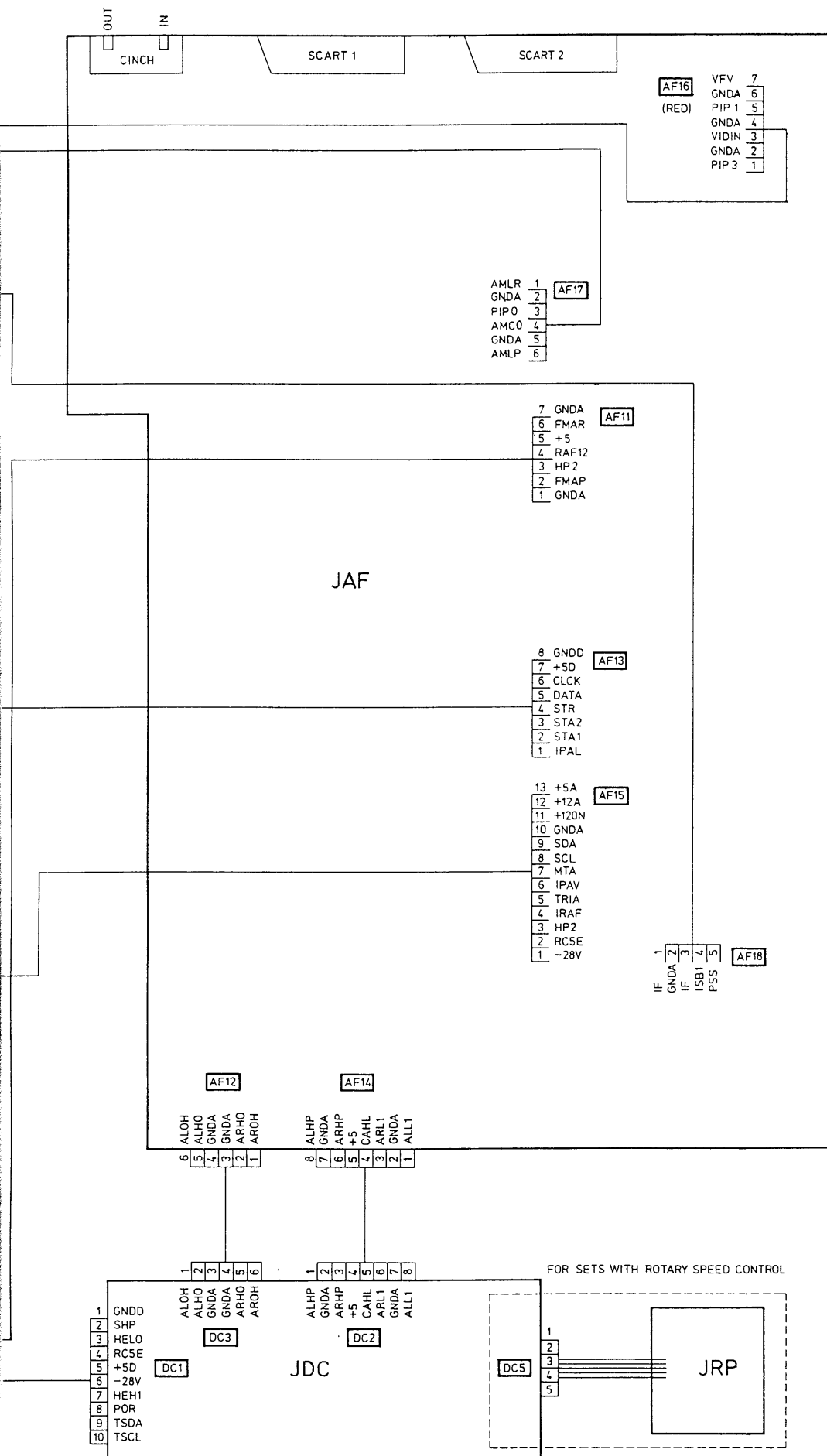
Fig. 10





* LPS... FOR SETS WITH LONGPLAY





List of abbreviations

Liste der Abkürzungen

Abréviations

AFCD	Autom. frequency control digital
AFV1	Audio left from FV
AFV2	Audio right from FV
AFV3	Audio mono from FV
ALHO, ALOH	Audio left level control
ALHP	Audio left headphone output
ALLI	Audio left level indication
ALFP	Audio left FM-playback
ALFR	Audio left FM-record
ARFP	Audio right FM-playback
ARFR	Audio right FM-record
AMCO	Audio to the modulator
AML P	Audio mono linear P.B
AML R	Audio mono linear record
ARHO, AROH	Audio right level control
ARHP	Audio right headphone output
ARLI	Audio right level indication
BUSY	OSD busy
CAP	Capstan on
CLOCK	OSD clock
CREV	Capstan reverse
CPV	Chroma playback video
CRV	Chroma record video
CSS	Colour system standard
CSYNC	Sync impulse
DAT	OSD data

Autom. Frequenzkontrolle digital
Audio links von Frontend
Audio rechts von Frontend
Audio mono von Frontend
Audio-Pegel links
Kopfhörerausgang links
Aussteuerungsanzeige links
FM-Audio Wiedergabe links
FM-Audio Aufnahme links
FM-Audio Wiedergabe rechts
FM-Audio Aufnahme rechts
Audio zum Modulator
Mono Audio Wiedergabe
Mono Audio Aufnahme
Audio-Pegel rechts
Kopfhörerausgang rechts
Aussteuerungsanzeige rechts
OSD aktiv
Capstan ein
OSD Serieller Bus Clock
Capstan reverse
Chroma Wiedergabe Video
Chroma Aufnahme Video
Farbstandard
Syncimpuls
OSD Serieller Bus Daten

Contrôle de fréquence digital auto
Audio gauche de FV
Audio droite de FV
Audio mono de FV
Contrôle du niveau du son de gauche
Écouteurs son gauche
Indication du niveau son de gauche
Audio gauche (FM) lecture
Audio droite (FM) lecture
Lecture (FM) son de droite
Enregistrement son de droite (FM)
Unité combi son mono vers le modulateur
Lecture mono du son linéaire
Enregistrement linéaire son mono
Contrôle du niveau du son de droite
Écouteurs son gauche
Indication du niveau du son de droite
OSD actif
Cabestan actif
Horloge de OSD de bus
Inversion du cabestan
Lecture chrominance image
Enregistrement chrominance image
Système couleur standard
Régulation signal de piste
Données sérielles de bus

Dual Language Control
 Type Vergleich
 er Eingang 1 (2)
 e frame pulse
 in Tacho digital
 dio-Wiedergabe
 dio-Aufnahme
 eo-Wiedergabe
 eo-Aufnahme
 pulse
 fsträger
 mmelmotor
 nschaltimpuls Video (Audio)
 opf-Auswahlregelung
 opf-Auswahlsignal
 andende (-anfang)
 ay ein
 ler Audiopegel
 le Mehrfachgeschwindigkeit
 schkopf ein
 dio-Modulator
 chgeschwindigkeit
 dio
 Wiedergabe
 ildimpuls
 gabe AL
 gabe AF, VS
 gabe Video
 on reset
 ECAM L
 me AF
 me AL
 me VS
 me geschützt
 eingang Auswahl
 Ausgang Auswahl
 M band 1
 ärferegler
 gnet
 Audio
 nde-Erkennung
 fangs-Erkennung
 kontrolle
 g-Information Audio
 g-Information Video
 a-Bus
 m deck P
 u SE
 om Frontend
 in
 um Modulator
 on der SE
 eller links
 eller rechts

Contrôle enveloppante
 Source externe 1 (2)
 Impulsion de montage spécial
 Cabestan tacho digital
 Lecture son FM
 Enregistrement son FM
 Lecture image FM
 Enregistrement image FM
 Impulsion image
 Sous-porteuse de couleur
 Moteur du tambour de tête
 Impulsion de tête image (son)
 Réglage de sélection de la tête vidéo
 Signal de sélection de la tête vidéo
 LED fin de bande (start)
 Longue durée actif
 Niveau non-automatique du son
 Sélection non-automatique de la tête
 Tête d'effacement principale actif
 Silence audio
 Vitesses variées
 Silencieux son
 60 Hz lecture
 Impulsion image OSD
 Lecture son linéaire
 Lecture AF, VS
 Lecture image
 Remise à zéro
 PAL/SECAM L
 Enregistrement son FM
 Enregistrement son linéaire
 Enregistrement image
 Sauvegarde enregistrement
 Sélection entrée son 1 (2)
 Sélection sortie son 1 (2)
 SECAM bandes 1
 Bus IIC
 Contrôle de netteté
 Solénoïde
 Statut son 1 (2)
 Repérage fin de bande
 Repérage début de bande
 Contrôle mire de test
 Palpage information son
 Palpage information image
 Toshiba bus
 Bus Uart 1 (2)
 Vidéo à SE
 Signal image du frontal
 Entrée video
 Image mono de l'unité combi
 Vidéo de SE
 Bobinage tacho de gauche
 Bobinage tacho de droite

ENVC Envelope comparator
 ESS1 (2) External source select 1 (2)
 FFP Feature frame pulse
 FGD Capstan tacho digital
 FMAP FM audio playback
 FMAR FM audio record
 FMPV FM playback video signal
 FMRV FM record video signal
 FRP Frame pulse
 FSC Colour subcarrier
 HMO Head drum motor
 HP1 (2) Head pulse video, (audio)
 HSC Headselectcontrol
 HSMS Head selection signal
 LED Led tape end (start)
 LP Longplay on
 MAAL Manual audio level
 MASM Manual autoselect multispeed
 MEHO Main erase head on
 MRF Mute audio combiunit
 MSP Multispeed
 MTA Mute audio
 NTSC 60 Hz playback
 OFF OSD frame pulse
 PAL Playback AL
 PAV Playback AF, VS
 PBV Playback video
 POR Power on reset
 PSS PAL/SECAM L
 RAF Record audio AF
 RAL Record AL
 REV Record video
 RP Record protect
 SAT1 (2) Select audio input 1 (2)
 SAO1 (2) Select audio output 1, (2)
 SBI SECAM band I
 SCL, SDA IIC bus
 SHP Sharpness control
 SOL Power solenoid
 STA1 (2) Status audio 1 (2)
 TAE End of tape detection
 TAS Beginning of tape detection
 TPC Testpicture check
 TRIA Tracking information audio
 TRIV Tracking information video
 TSCL, TSDA Toshiba bus
 UART1 (2) Bus deck
 VBS Video to SE
 VFV Video of frontend
 VIDIN Video in
 VMCO Video modulator combiunit
 VSB Video from SE
 WTAL Wind tacho left
 WTAR Wind tacho right

Envelope
 External
 Feature
 Capstan
 FM Au
 FM Vic
 FM Vic
 Frame
 Farbhil
 Kopftro
 Kopfun
 Videok
 LED Ba
 Longpla
 Manue
 Manue
 Hauptk
 Mute A
 Mehrra
 Mute A
 60 Hz-
 OSD-B
 Wieder
 Wieder
 Wieder
 Power
 PAL/SE
 Aufnah
 Aufnah
 Aufnah
 Aufnah
 Audio B
 Audio A
 SECAM
 IIC-Bus
 Bildsch
 Hubma
 Status
 Bander
 Bandan
 Testbil
 Trackin
 Trackin
 Toshiba
 Bus zu
 Video z
 Video v
 Video e
 Video z
 Video v
 Wickelt
 Wickelt

**Lijst van afkortingen**

AFCD	Auto frekw. regeling-digital
AFV1	Audio links van FV
AFV2	Audio rechts van FV
AFV3	Audio mono van FV
ALHO, ALOH	Nivo regular audio links
ALHP	Hoofd telefoon uitgang links
ALLI	Nivo indicator audio links
ALFP	Weergave FM audio links
ALFR	Opname FM audio links
ARFP	Weergave FM audio rechts
ARFR	Opname FM audio rechts
AMCO	Audio naar de modulator
AMPL	Weergave audio mono lineair
AMLR	Opname audio mono lineair
ARHO, AROH	Nivo regelaar audio rechts
ARHP	Hoofd telefoon uitgang rechts

Lista de abreviaturas

Control de frecuencia automát. digital
Audio izquierdo front-end
Audio derecho front-end
Audio mono front-end
Nivel-audio izquierdo
Salida auricular izquierda
Indicador de modulación izquierdo
Reproducción FM-audio izquierdo
Grabación FM-audio izquierdo
Reproducción FM-audio derecho
Grabación FM-audio derecho
Audio hacia modulador
Reproducción audio mono
Grabación audio mono
Nivel audio derecho
Salida auricular derecha

Lista delle abbreviazioni

Controllo frequenza digitale autom.
Audio dal front-end sinistro
Audio dal front-end destro
Audio mono dal front-end
Livello audio sinistro
Uscita cuffia sinistra
Indicazione livello audio canale sinistro
Riproduzione audio FM sinistro
Registrazione audio FM sinistro
Riproduzione audio FM destro
Registrazione audio FM destro
Audio per il modulatore
Riproduzione audio mono
Registrazione audio mono
Livello audio destro
Uscita cuffia destra

Power supply JSM-40

1101 A7	2136 B5	2260 A2	3131 B5	3247 C4	5215 B3	6137
1216 A2	2207 C1	2261 A1	3134 B5	3248 C4	5230 B2	6138
1228 B1	2208 B2	3102 A7	3140 C6	3250 C2	5263 A1	6207
2101 B7	2210 B2	3103 A6	3141 B6	3251 C2	5264 A1	6208
2103 A5	2211 A1	3104 A6	3207 C1	3254 C1	6110 B6	6215
2107 C6	2212 A2	3106 C7	3217 B1	3255 C1	6111 B6	6216
2108 C7	2217 B1	3109 C6	3230 B2	3257 C1	6112 B6	6230
2112 A5	2221 A1	3112 B6	3236 C3	3258 C1	6113 B6	6235
2113 C4	2222 A1	3120 C5	3238 C2	5103 B7	6120 C5	6236
2115 C7	2230 B1	3121 C6	3240 C3	5114 B3	6123 C4	6237
2121 C5	2236 C3	3123 B4	3242 C2	5131 B5	6124 C5	6241
2124 C5	2238 C3	3124 C6	3243 C2	5134 B5	6127 C6	6251
2127 C6	2244 C1	3125 C5	3244 C2	5201 A2	6129 C5	6252
2135 B4	2254 C1	3126 C5	3246 C3	5208 B1	6136 B5	6253

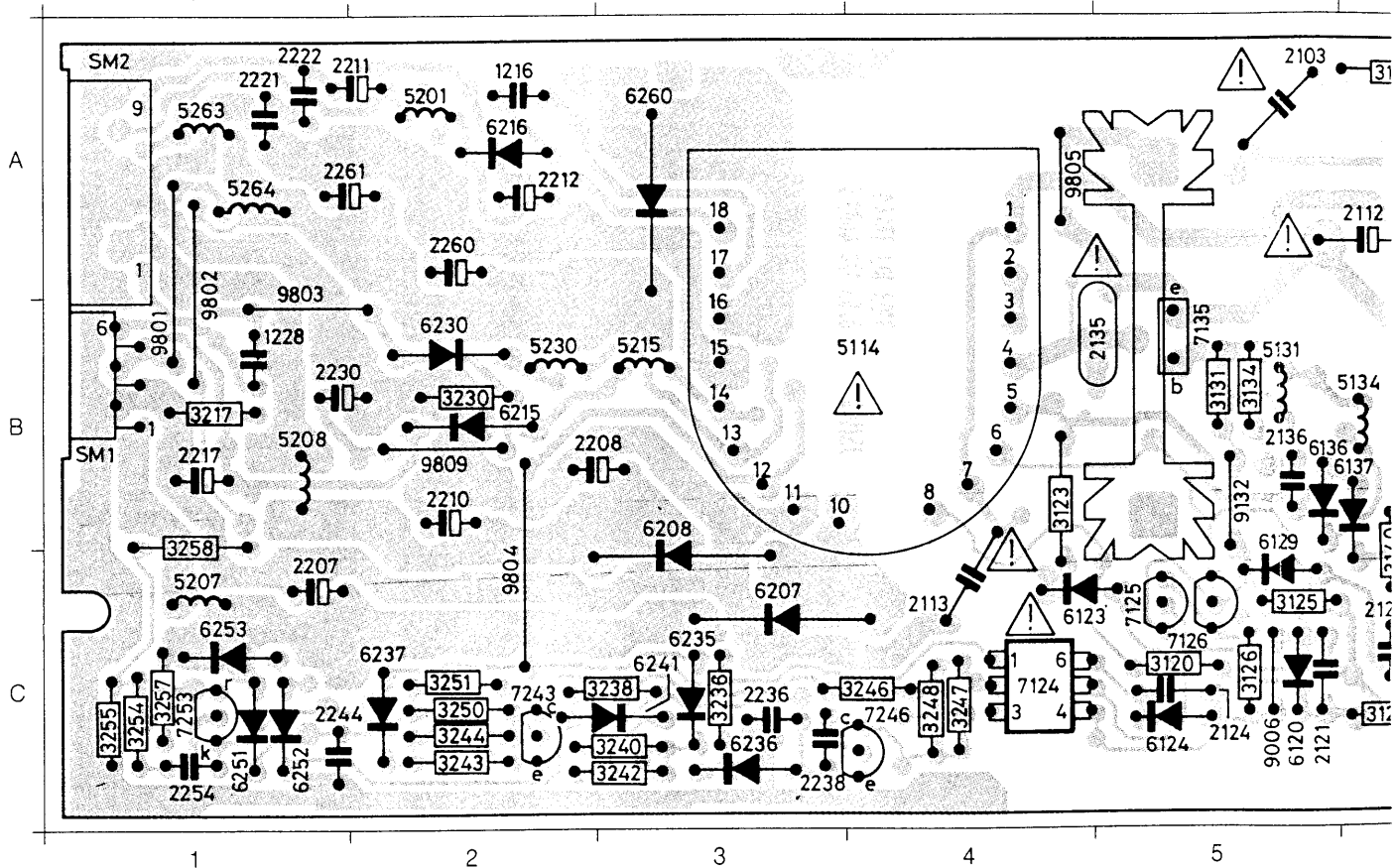
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2136	B5	2260	A2	3131	B5	3247	C4	5215	B3	6137	B5	6260	A3	9132
2207	C1	2261	A1	3134	B5	3248	C4	5230	B2	6138	B6	7121	C6	9801
2208	B2	3102	A7	3140	C6	3250	C2	5263	A1	6207	C3	7124	C4	9802
2210	B2	3103	A6	3141	B6	3251	C2	5264	A1	6208	B3	7125	C5	9803
2211	A1	3104	A6	3207	C1	3254	C1	6110	B6	6215	B2	7126	C5	9804
2212	A2	3106	C7	3217	B1	3255	C1	6111	B6	6216	A2	7135	B5	9805
2217	B1	3109	C6	3230	B2	3257	C1	6112	B6	6230	B2	7243	C2	9809
2221	A1	3112	B6	3236	C3	3258	C1	6113	B6	6235	C3	7246	C4	
2222	A1	3120	C5	3238	C2	5103	B7	6120	C5	6236	C3	7253	C1	
2230	B1	3121	C6	3240	C3	5114	B3	6123	C4	6237	C1	9006	C5	
2236	C3	3123	B4	3242	C2	5131	B5	6124	C5	6241	C3	9007	C7	
2238	C3	3124	C6	3243	C2	5134	B5	6127	C6	6251	C1	9008	C7	
2244	C1	3125	C5	3244	C2	5201	A2	6129	C5	6252	C1	9013	C7	
2254	C1	3126	C5	3246	C3	5208	B1	6136	B5	6253	C1	9014	C6	

2

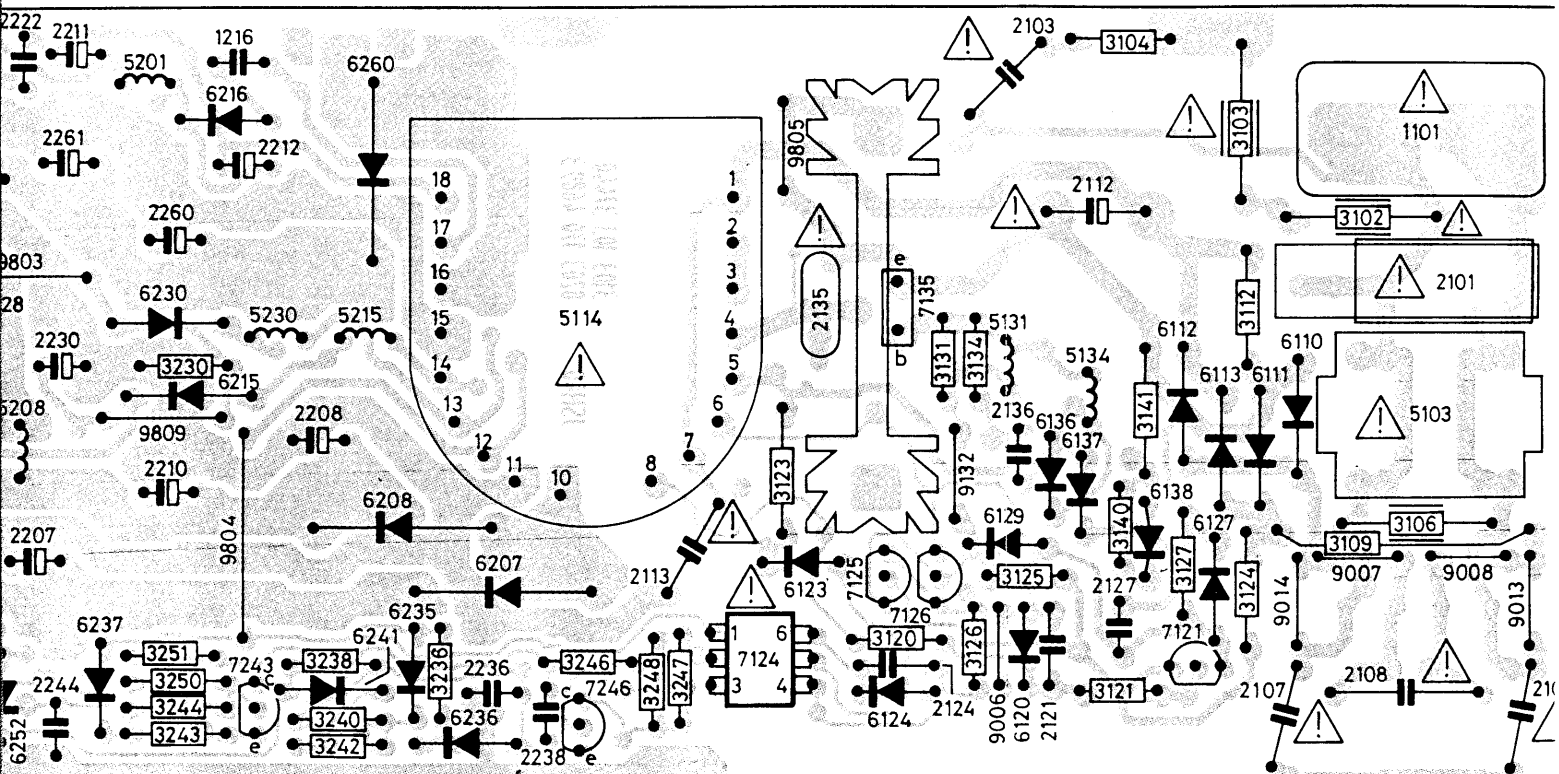
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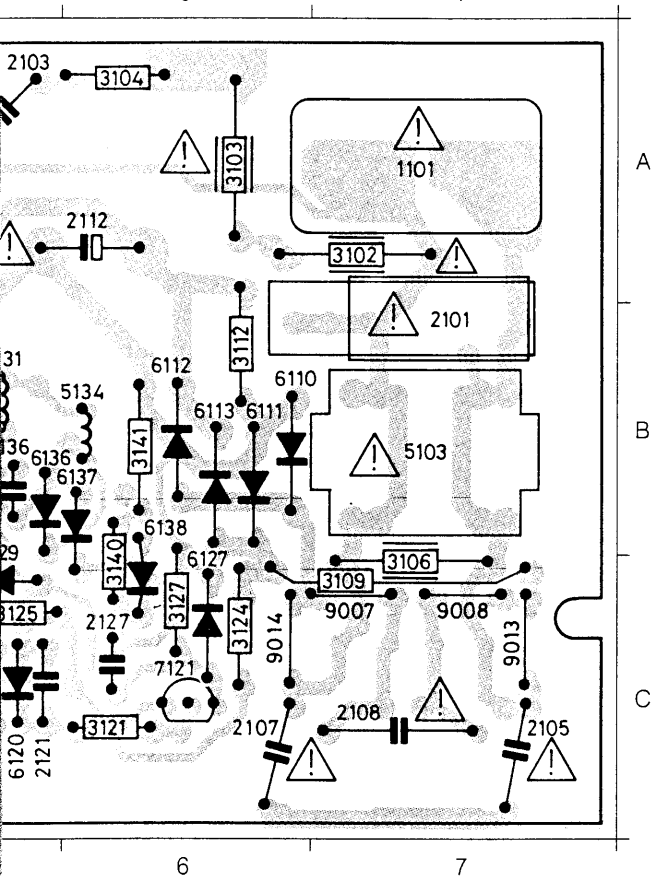
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6137 B5	6260 A3	9132 B5
6138 B6	7121 C6	9801 B1
6207 C3	7124 C4	9802 A1
6208 B3	7125 C5	9803 B1
6215 B2	7126 C5	9804 C2
6216 A2	7135 B5	9805 A4
6230 B2	7243 C2	9809 B2
6235 C3	7246 C4	
6236 C3	7253 C1	
6237 C1	9006 C5	
6241 C3	9007 C7	
6251 C1	9008 C7	
6252 C1	9013 C7	
6253 C1	9014 C6	

6

7



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45 506 C14

A:AC, 100V/Div, 5us/Div

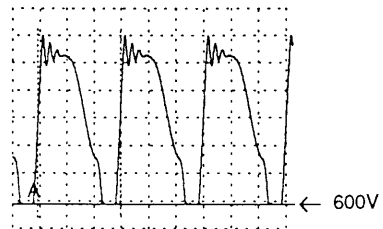


Fig. 1

A:DC, 2 V/Div, 5us/Div
B:GND Reference

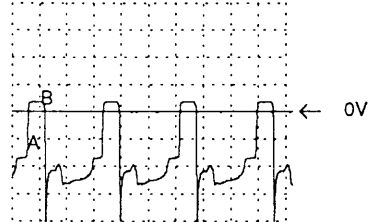


Fig. 2

A:DC, 2 V/Div, 5us/Div
B:GND Reference

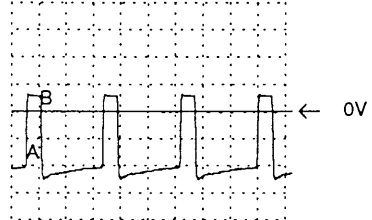


Fig. 3

A:DC, 2 V/Div, 5us/Div
B:GND Reference

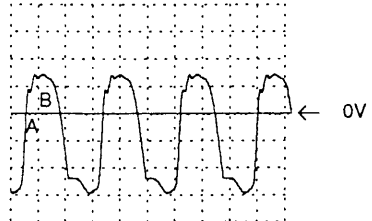


Fig. 4

A:DC, 5 V/Div, 5us/Div
B:GND Reference

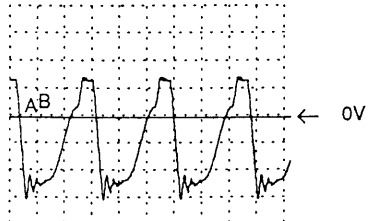
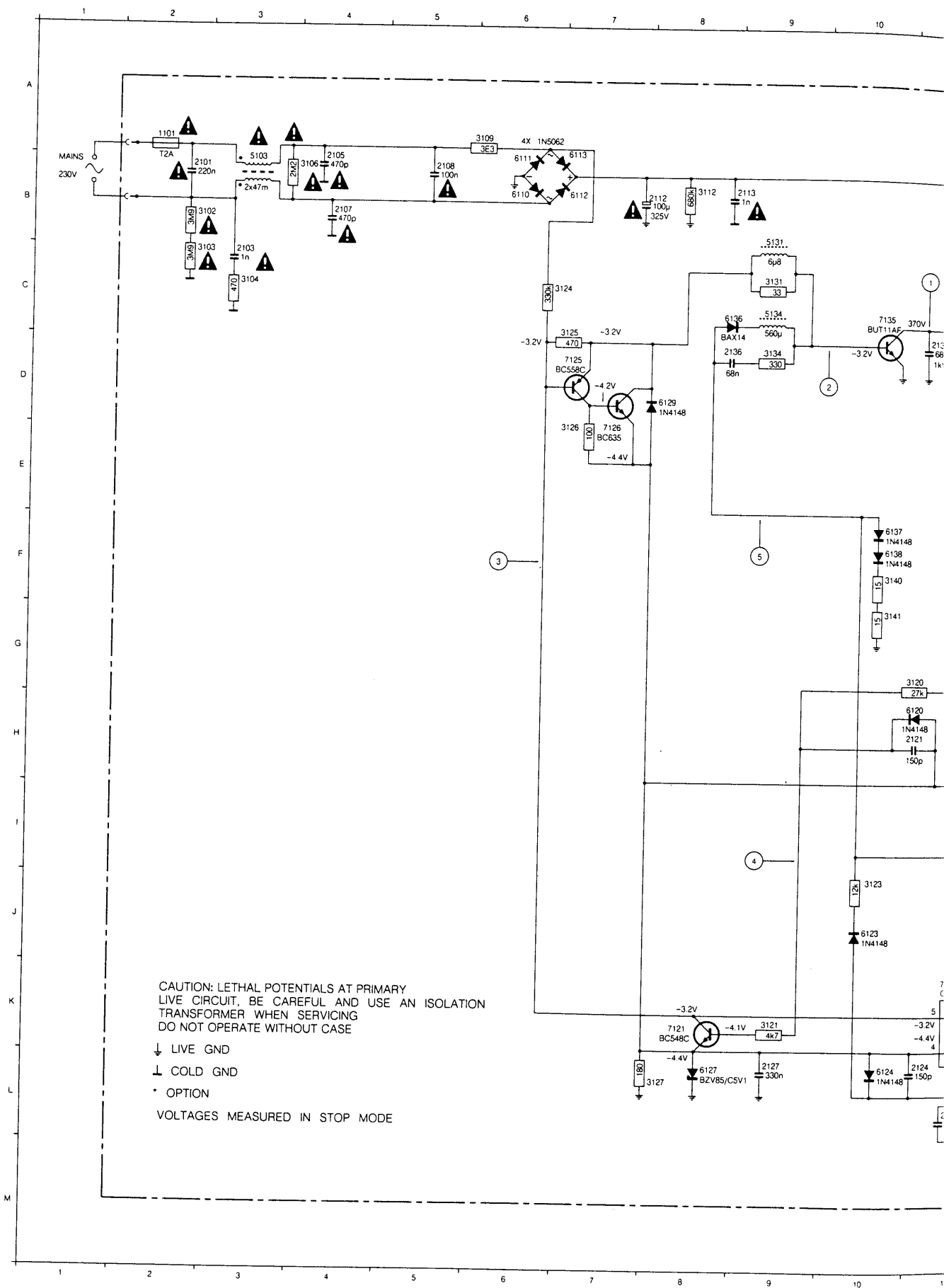
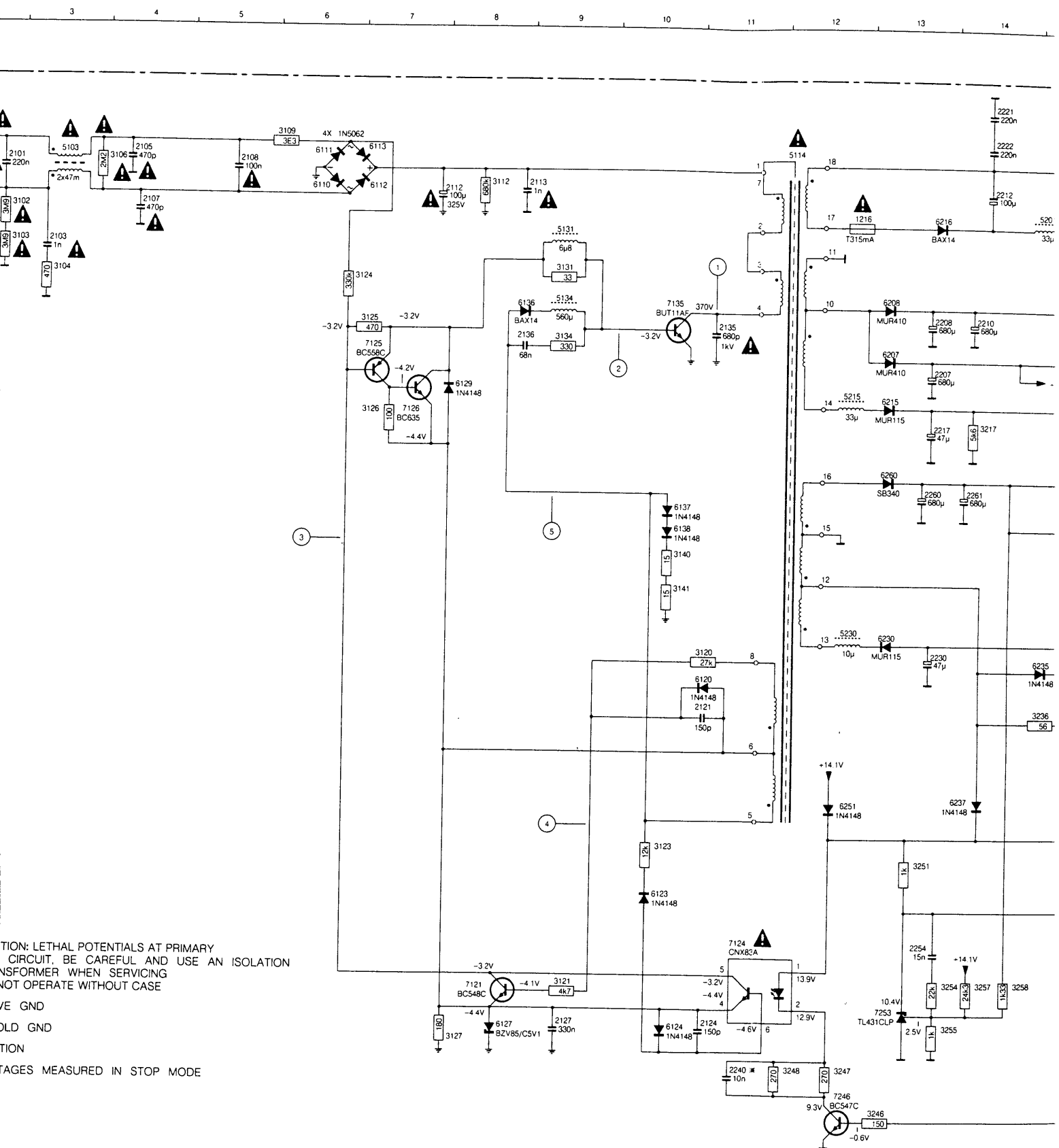
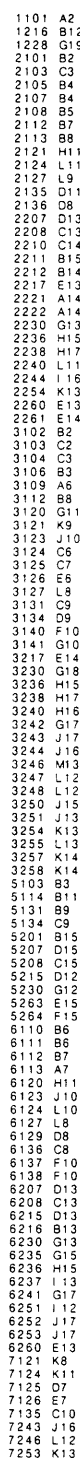


Fig. 5







3-4

Head amplifier HV4/2

Einstellungen am Kopfverstärker

1. Luminanz-Schreibstromeinstellung (3022)
 - kein Signal einspeisen (Programm E1)
 - Gerät in Stellung "AUFNAHME" bringen
 - an den Schreibstrom-Meßpin ein Oszilloskop schalten
 - die Masse des Oszilloskops mit dem Massepin und der Abschirmung des Kopfverstärkers verbinden.
 - Widerstand 3022 so einstellen, daß die Amplitude des Signals 105mVss (für Geräte ohne Video-Longplay) oder 95mVss (für Geräte mit Video-Longplay) beträgt.
2. Chrominance-Schreibstromeinstellung (3023)
 - mit einem Testbildgenerator über den Eurokonnektor (Programm E1) ein Rotbild-Videosignal einspeisen
 - Gerät in Stellung "AUFNAHME" bringen
 - an den Schreibstrom-Meßpin ein Oszilloskop schalten
 - die Masse des Oszilloskops mit dem Massepin und der Abschirmung des Kopfverstärkers verbinden
 - Pin 4L6 mit Masse verbinden
 - Widerstand 3023 so einstellen, daß die Amplitude des Signals -12 dB (auf das Luminanzsignal bezogen) beträgt (25mV)

Settings of the head amplifier

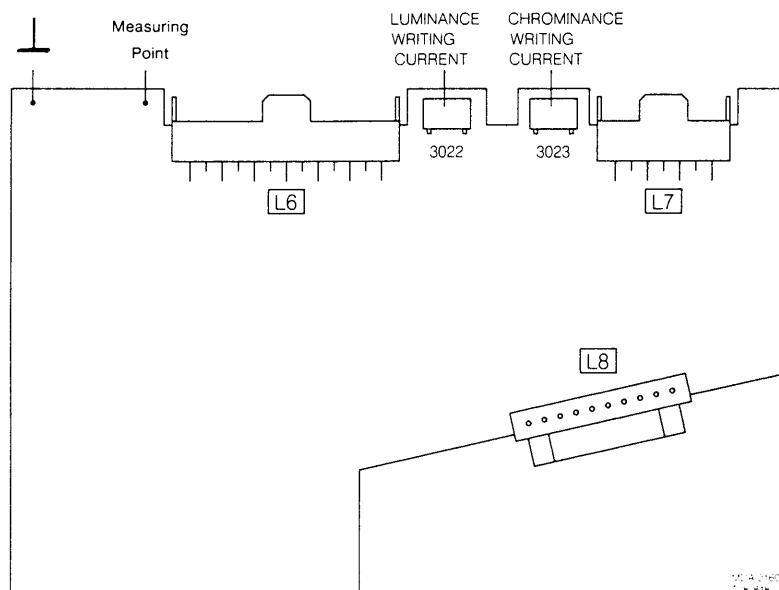
1. Luminance record current setting (3022)
 - Feed no signal (program E1)
 - Bring unit in mode "RECORD"
 - Connect an oscilloscope to the record current measuring pin
 - Connect the chassis of the oscilloscope to the chassis pin and the screening of the head amplifier
 - Set resistor 3022 so that the amplitude of the signal is 105 mVss (for units without video longplay) or 95 mVss (for units with video longplay)
2. Chrominance record current setting (3023)
 - Feed a red clip video signal with a test pattern generator via the Euroconnector (program E1)
 - Bring unit into mode "RECORD"
 - Connect an oscilloscope to the record current measuring pin
 - Connect the chassis of the oscilloscope with the chassis pin and the screening of the head amplifier
 - Connect pin 4L6 with the chassis
 - Set resistor 3023 so that the amplitude of the signal is - 12 dB (with reference to the luminance signal) (25 mV)

Instellingen aan de kopversterker

1. Instelling van de schrijfstroom voor het helderheidssignaal (3022)
 - Geen signaal ingeven (programma E1)
 - toestel op "OPNAME" schakelen
 - op de schrijfstroommeetpin een oscilloscoop aansluiten
 - de massa van de oscilloscoop met de massapin en de afscherming van de kopversterker verbinden
 - weerstand 3022 zodanig instellen dat de amplitude van het signaal 105mVtt (voor toestellen zonder video-longplay) of 95mVtt (voor toestellen met video-longplay) bedraagt.
2. Instelling van de schrijfstroom voor het chromasignaal (3023)
 - met een testbeeldgenerator via de euroconnector (programma E1) een roodbeeld-videosignaal ingeven
 - toestel op "OPNAME" schakelen
 - op de schrijfstroommeetpin een oscilloscoop aansluiten
 - de massa van de oscilloscoop met de massapin en de afscherming van de kopversterker verbinden
 - Pin 4L6 met de massa verbinden
 - weerstand 3023 zodanig instellen dat de amplitude van het signaal -12 dB (betrokken op het helderheidssignaal) bedraagt (25mVtt).

Ajustages sur l'amplificateur de tête

1. Réglage du courant d'écriture de luminance (3022)
 - ne pas appliquer de signal (programme E1)
 - positionner l'appareil sur la position "Enregistrement"
 - brancher un oscilloscope sur la broche de mesure du courant d'écriture
 - relier la masse de l'oscilloscope à la broche de masse et au blindage de l'amplificateur de tête.
 - régler la résistance 3022 de telle façon que l'amplitude du signal s'élève à 105 mVcc pour les appareils sans "Long-Play" et à 95 mVcc pour les appareils dotés d'un "Long-Play".
2. Réglage du courant d'écriture de chrominance (3023)
 - appliquer à l'Euroconnecteur (programme E1) un signal vidéo rouge à l'aide d'un générateur de mire d'essai
 - mettre l'appareil en position "Enregistrement"
 - brancher un oscilloscope sur la broche de mesure du courant d'écriture
 - relier la masse de l'oscilloscope à la broche de masse et au blindage de l'amplificateur de tête
 - relier la broche 4L6 à la masse
 - régler la résistance 3023 de telle façon que l'amplitude du signal (se rapportant au signal de luminance) s'élève à -12dB (25mV)



Ajustes del amplificador de cabezas

1. Regulación de la luminancia-corriente de escritura (3022)

- No alimentar ninguna señal (Programa E1)
- Poner el aparato en posición de "GRABACION"
- Conectar un osciloscopio al conector de medición de la corriente de escritura
- Conectar la masa del osciloscopio con el conector de masa y la protección antiparasitaria del amplificador de cabezas
- Regular la resistencia 3022 de forma que la amplitud de la señal sea de 105 mVss (para aparatos sin Video-Longplay), o 95 mVss (para aparatos con Video-Longplay)

2. Regulación de la corriente de escritura-crominancia (3023)

- Mediante un generador de carta de ajuste, aportar una señal de video roja por el euroconector (Programa E1)
- Poner el aparato en posición de "GRABACION"
- Conectar un osciloscopio al conector de medición de la corriente de escritura
- Conectar la masa del osciloscopio con la aguja de masa y la protección antiparasitaria del amplificador de cabezal
- Conectar la clavija 4L6 con la masa
- Regular la resistencia 3023 de modo que la amplitud de la señal (con relación a la señal de luminancia) sea de -12 dB (25mV).

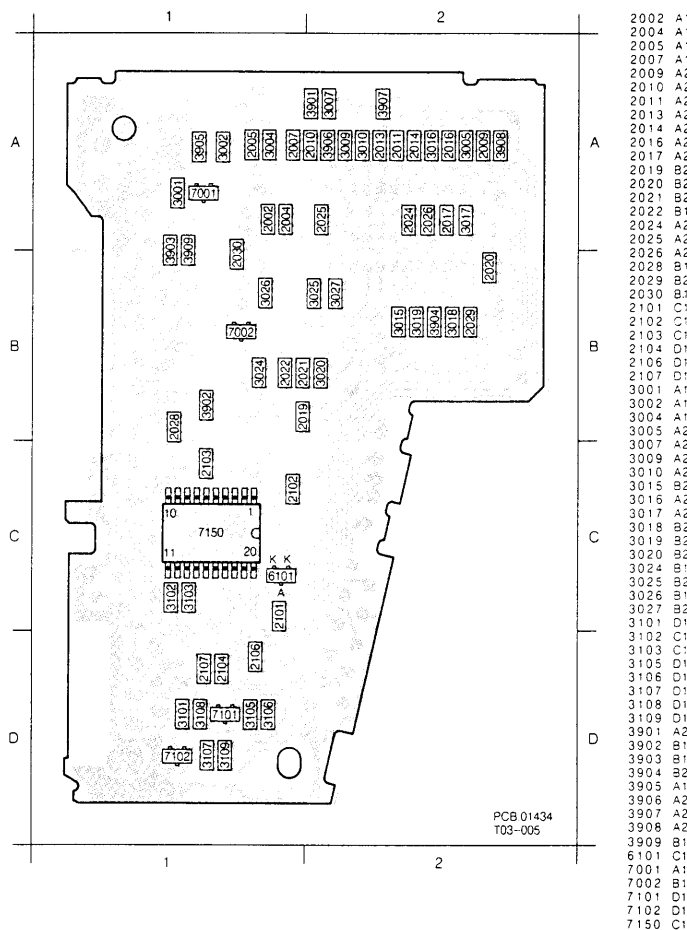
Regolazioni al preamplificatore testine

1. Regolazione della corrente di registrazione di luminanza (3022)

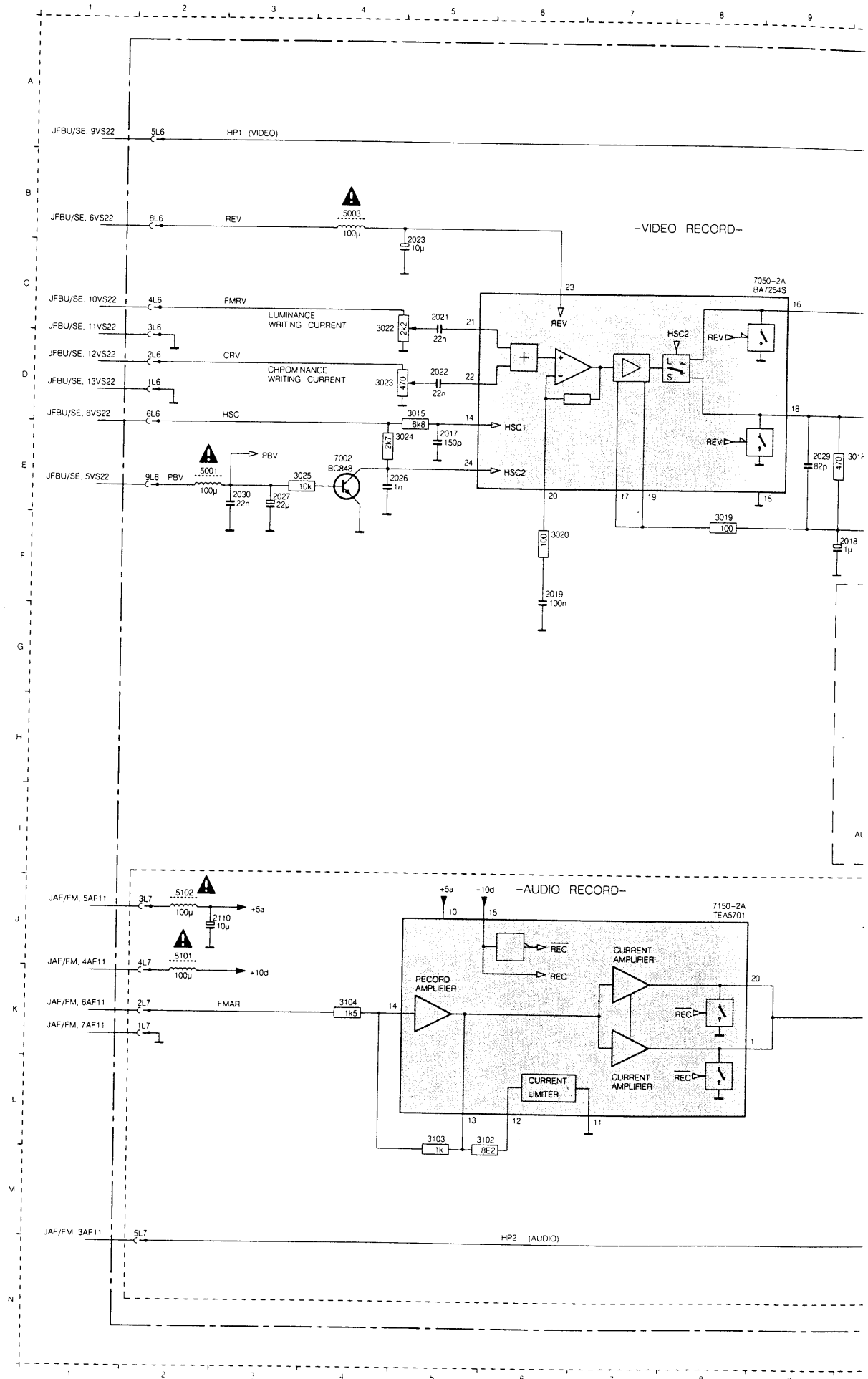
- non applicare nessun segnale (programma E1)
- portare l'apparecchio in posizione "REGISTRAZIONE"
- collegare un'oscilloscopio al Pin di misurazione della corrente di registrazione
- collegare la massa dell'oscilloscopio con il Pin collegato a massa e con la schermatura del preamplificatore testine
- regolare il potenziometro 3022 in modo che l'ampiezza del segnale indichi 105mVpp (per apparecchi senza "Video-Longplay") o 95mVpp (per apparecchi con "Video-Longplay")

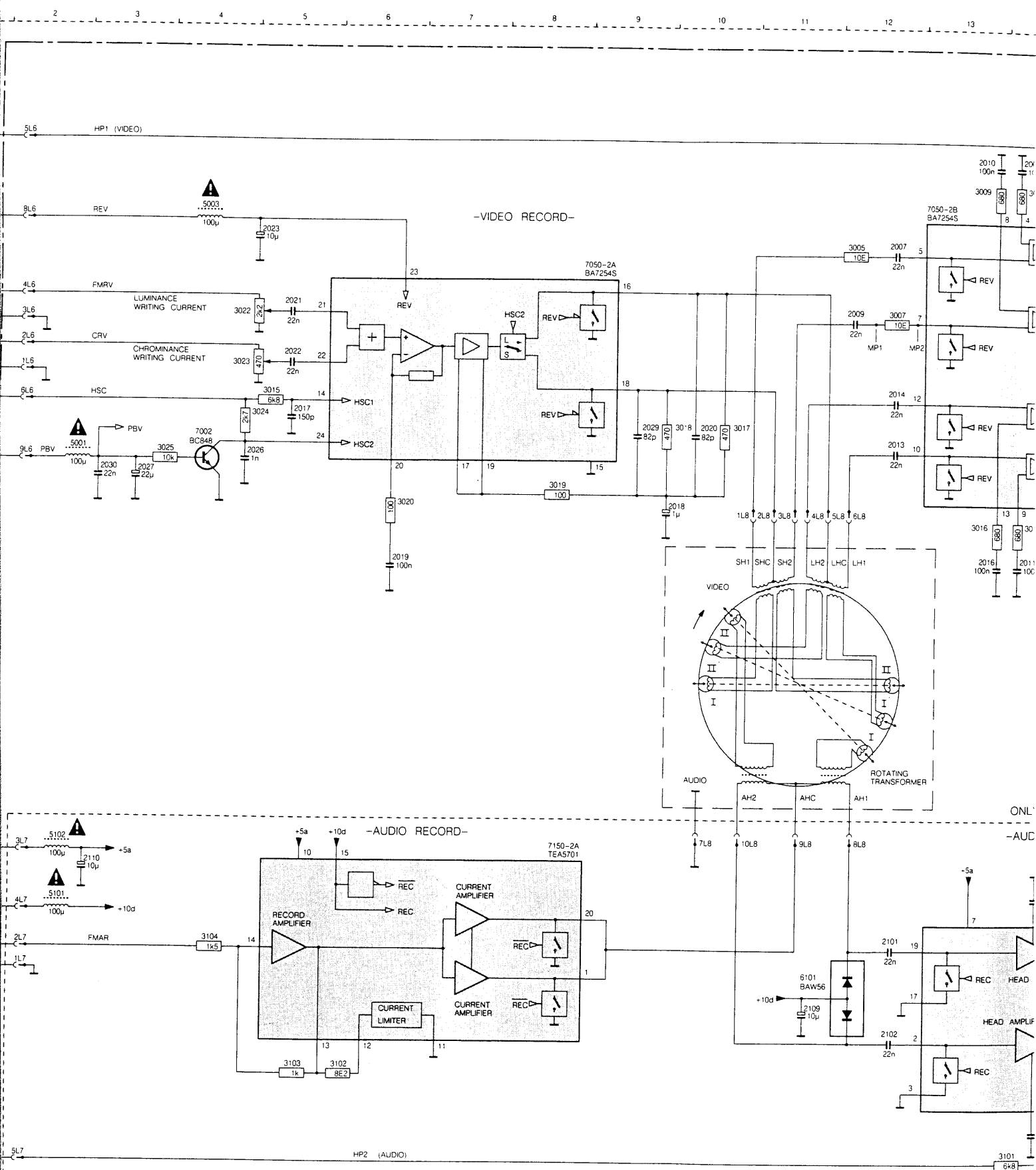
2. Regolazione della corrente di registrazione di crominanza (3023)

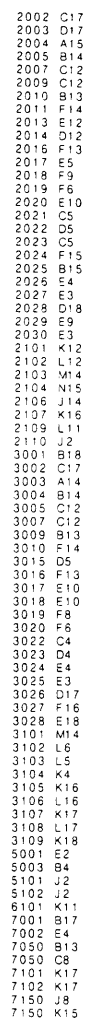
- applicare un segnale video completamente rosso al connettore EURO (programma E1) con un generatore di segnale test
- portare l'apparecchio in posizione "REGISTRAZIONE"
- collegare un'oscilloscopio al Pin di misurazione della corrente di registrazione
- collegare la massa dell'oscilloscopio con il Pin collegato a massa e con la schermatura del preamplificatore testine
- collegare Pin 4L6 con la massa
- regolare il potenziometro 3023 in modo che l'ampiezza del segnale sia -12dB (rispetto al segnale di luminanza) (25mV)

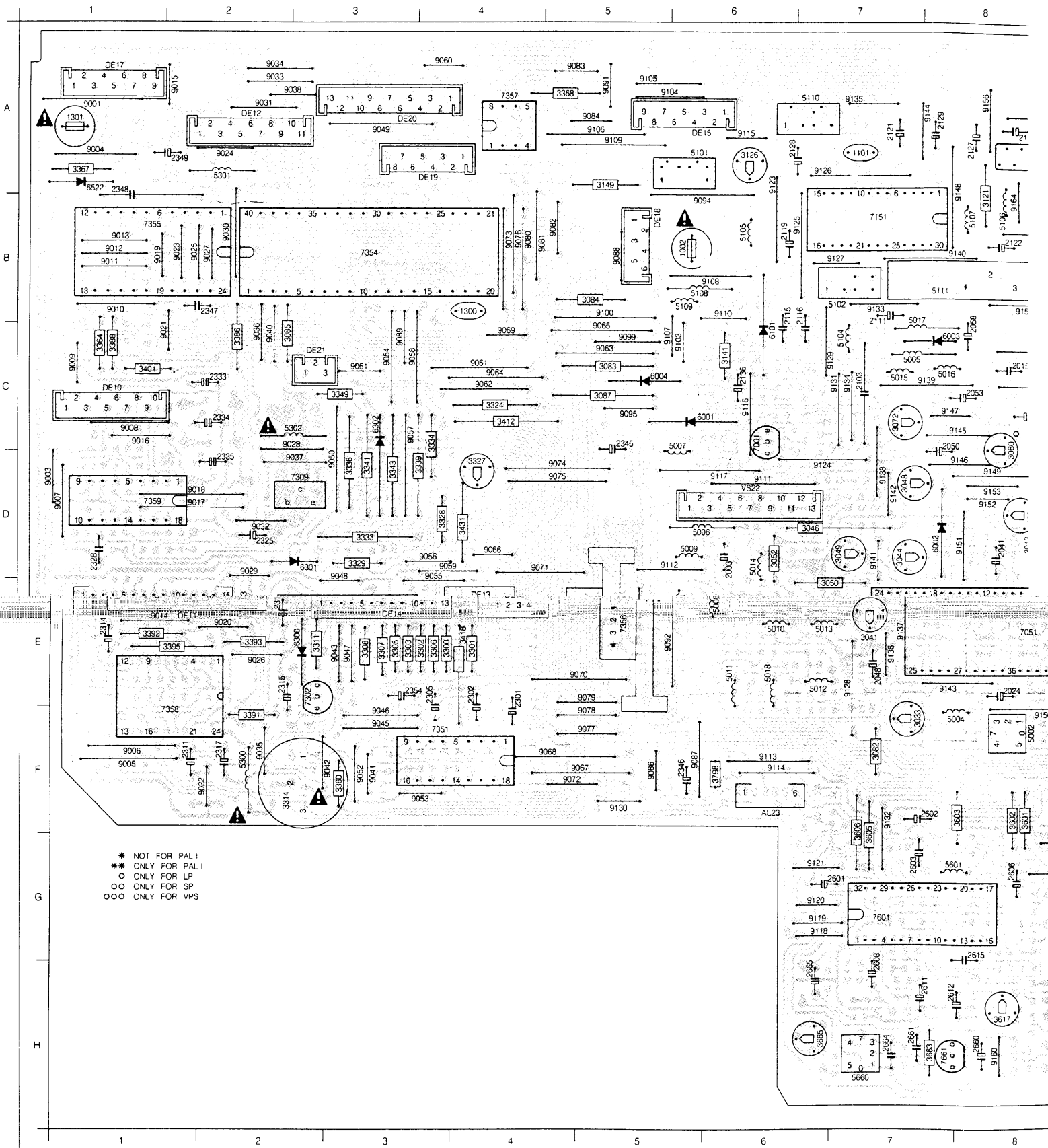


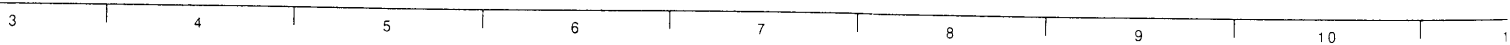
Head amplifier HV4/2









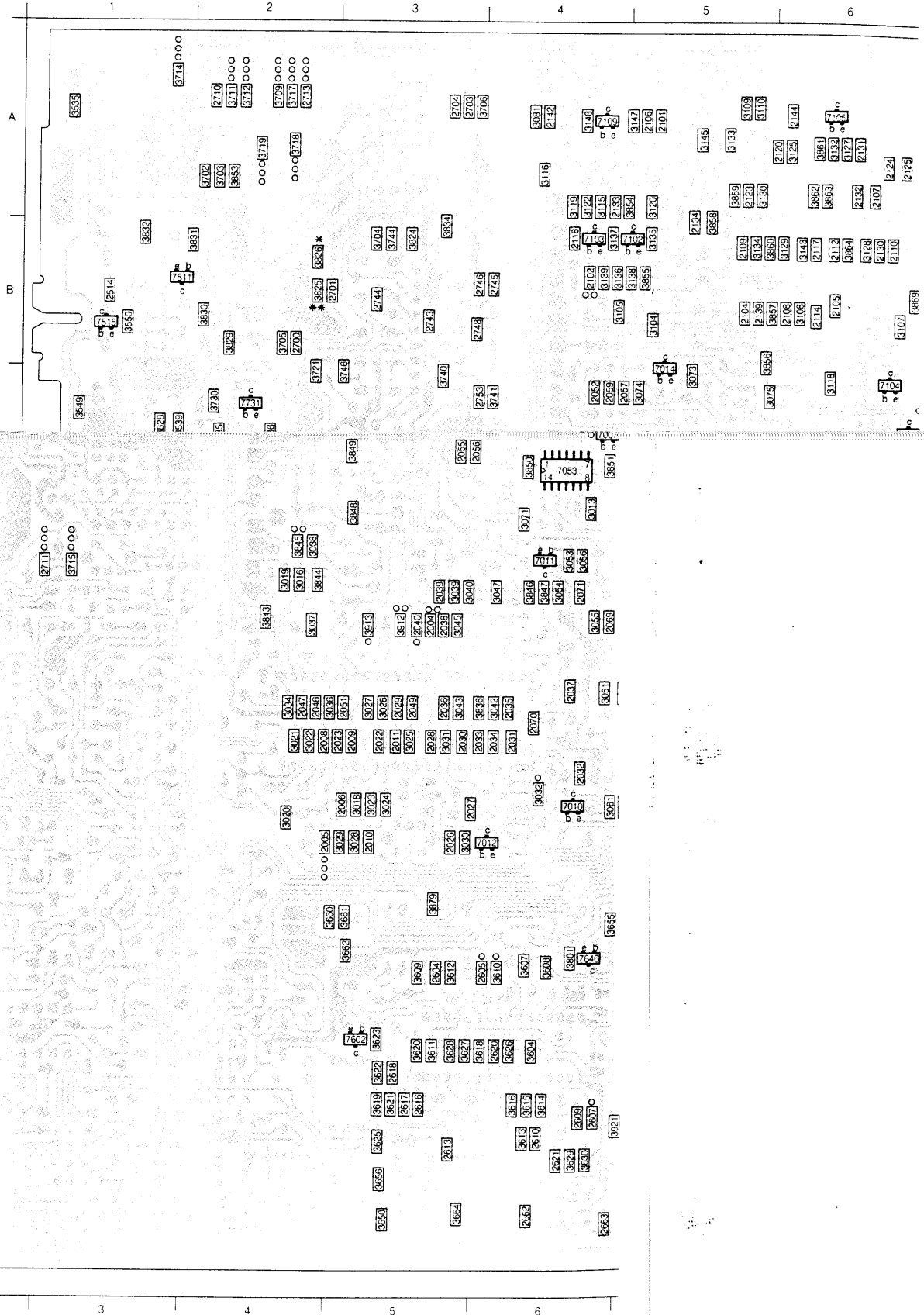


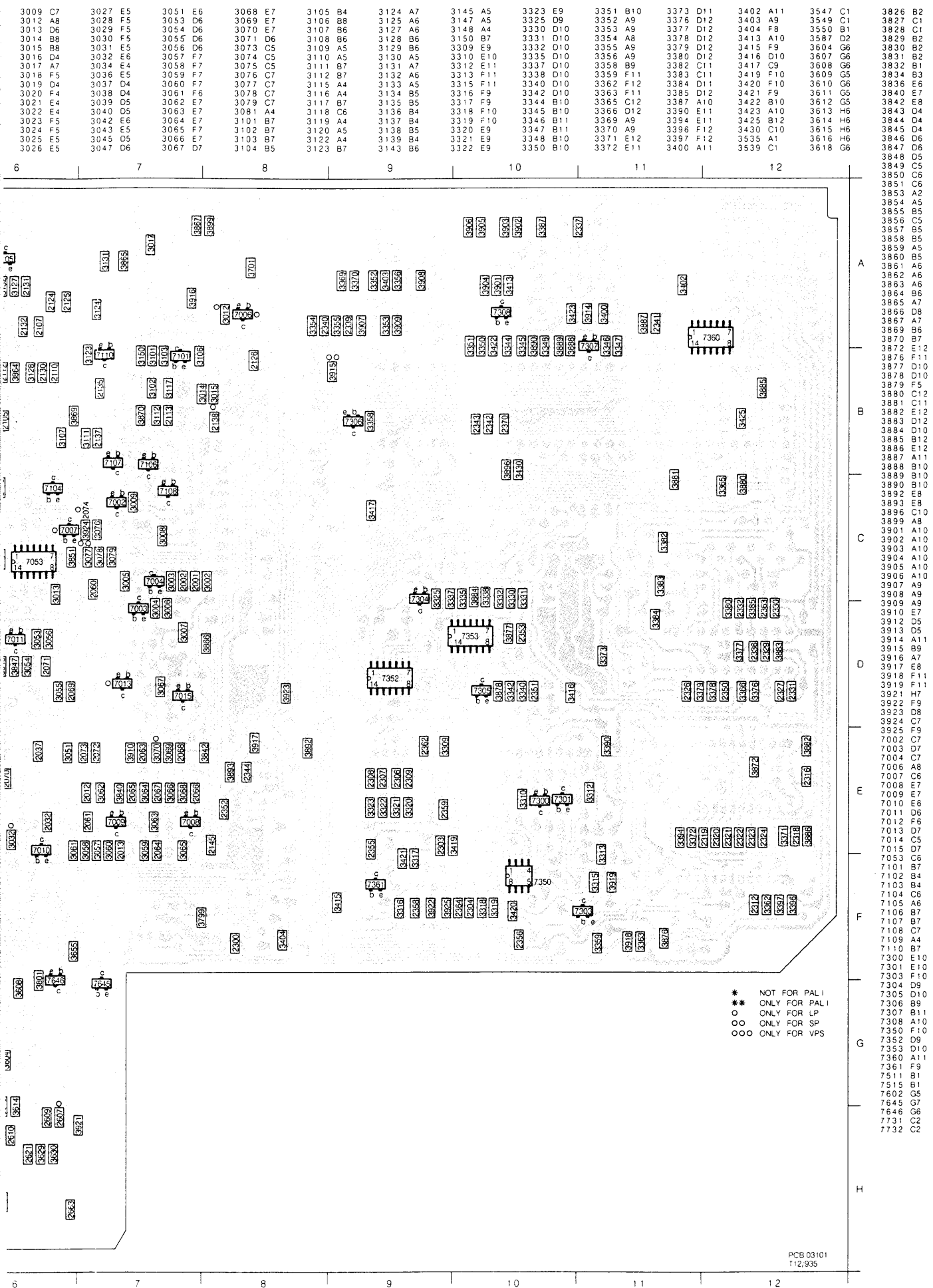


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	2004 C1	3399 E1	9032 A2	9170 D8
	2004 E1	3399 E1	9032 A2	9170 D8
	2004 F1	3399 E1	9032 A2	9170 D8
	2004 G1	3399 E1	9032 A2	9170 D8
	2004 H1	3399 E1	9032 A2	9170 D8
	2004 I1	3399 E1	9032 A2	9170 D8
	2004 J1	3399 E1	9032 A2	9170 D8
B	2004 B8	3399 E1	9032 A2	9170 D8
	2004 C8	3399 E1	9032 A2	9170 D8
	2004 D8	3399 E1	9032 A2	9170 D8
	2004 E8	3399 E1	9032 A2	9170 D8
	2004 F8	3399 E1	9032 A2	9170 D8
	2004 G8	3399 E1	9032 A2	9170 D8
	2004 H8	3399 E1	9032 A2	9170 D8
	2004 I8	3399 E1	9032 A2	9170 D8
	2004 J8	3399 E1	9032 A2	9170 D8
	2004 K8	3399 E1	9032 A2	9170 D8
C	2004 L8	3399 E1	9032 A2	9170 D8
	2004 M8	3399 E1	9032 A2	9170 D8
	2004 N8	3399 E1	9032 A2	9170 D8
	2004 O8	3399 E1	9032 A2	9170 D8
	2004 P8	3399 E1	9032 A2	9170 D8
	2004 Q8	3399 E1	9032 A2	9170 D8
	2004 R8	3399 E1	9032 A2	9170 D8
	2004 S8	3399 E1	9032 A2	9170 D8
	2004 T8	3399 E1	9032 A2	9170 D8
	2004 U8	3399 E1	9032 A2	9170 D8
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	2004 Y8	3399 E1	9032 A2	9170 D8
	2004 Z8	3399 E1	9032 A2	9170 D8
	2005 A8	3399 E1	9032 A2	9170 D8
	2005 B8	3399 E1	9032 A2	9170 D8
	2005 C8	3399 E1	9032 A2	9170 D8
	2005 D8	3399 E1	9032 A2	9170 D8
	2005 E8	3399 E1	9032 A2	9170 D8
E	2005 F8	3399 E1	9032 A2	9170 D8
	2005 G8	3399 E1	9032 A2	9170 D8
	2005 H8	3399 E1	9032 A2	9170 D8
	2005 I8	3399 E1	9032 A2	9170 D8
	2005 J8	3399 E1	9032 A2	9170 D8
	2005 K8	3399 E1	9032 A2	9170 D8
	2005 L8	3399 E1	9032 A2	9170 D8
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	2005 N8	3399 E1	9032 A2	9170 D8
	2005 O8	3399 E1	9032 A2	9170 D8
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	2005 S8	3399 E1	9032 A2	9170 D8
	2005 T8	3399 E1	9032 A2	9170 D8
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	2005 W8	3399 E1	9032 A2	9170 D8
	2005 X8	3399 E1	9032 A2	9170 D8
	2005 Y8	3399 E1	9032 A2	9170 D8
G	2005 Z8	3399 E1	9032 A2	9170 D8
	2006 A8	3399 E1	9032 A2	9170 D8
	2006 B8	3399 E1	9032 A2	9170 D8
	2006 C8	3399 E1	9032 A2	9170 D8
	2006 D8	3399 E1	9032 A2	9170 D8
	2006 E8	3399 E1	9032 A2	9170 D8
	2006 F8	3399 E1	9032 A2	9170 D8
	2006 G8	3399 E1	9032 A2	9170 D8
	2006 H8	3399 E1	9032 A2	9170 D8
	2006 I8	3399 E1	9032 A2	9170 D8
H	2006 J8	3399 E1	9032 A2	9170 D8
	2006 K8	3399 E1	9032 A2	9170 D8
	2006 L8	3399 E1	9032 A2	9170 D8
	2006 M8	3399 E1	9032 A2	9170 D8
	2006 N8	3399 E1	9032 A2	9170 D8
	2006 O8	3399 E1	9032 A2	9170 D8
	2006 P8	3399 E1	9032 A2	9170 D8
	2006 Q8	3399 E1	9032 A2	9170 D8
	2006 R8	3399 E1	9032 A2	9170 D8
	2006 S8	3399 E1	9032 A2	9170 D8

Family board unit JFBU

2001 C7	2029 E5	2052 C4	2072 E7	2118 B4	2144 A6	2323 E12	2350 D12	2607 H6	2710 A2	3009 C7
2002 C7	2030 E5	2055 C5	2073 E7	2120 A6	2145 E8	2324 E12	2351 D10	2609 H6	2711 D3	3012 A8
2004 D5	2031 E6	2056 C6	2074 C7	2123 A5	2300 F8	2326 D11	2352 E8	2610 H6	2713 A2	3013 G6
2005 F5	2032 E6	2057 C4	2101 A5	2124 A6	2303 F9	2327 D12	2353 D10	2613 H5	2743 B3	3014 B8
2006 F5	2033 E6	2059 C4	2102 B4	2125 A6	2304 F10	2329 D12	2355 F9	2616 H5	2744 B3	3015 B8
2008 E5	2034 E6	2060 C7	2104 B5	2126 B8	2306 E9	2330 D12	2356 F10	2617 H5	2745 B4	3016 D4
2009 E5	2035 E6	2061 E7	2105 B6	2130 B6	2307 E9	2331 D12	2358 F9	2618 G5	2746 B3	3017 A7
2010 F5	2036 E6	2063 E7	2106 A5	2131 A6	2308 E9	2332 D12	2359 E9	2620 C8	2748 B3	3018 F5
2011 E5	2037 E6	2064 F7	2107 A6	2132 A6	2309 E9	2336 D12	2362 E9	2621 H6	2753 C3	3019 D4
2012 E7	2038 D5	2065 E7	2108 B6	2133 A4	2312 F12	2337 A11	2363 D12	2662 H6	3002 C8	3020 F4
2013 F7	2039 D5	2066 E7	2109 B5	2134 B5	2316 E12	2339 A9	2364 F10	2663 H6	3003 C7	3021 E4
2022 E5	2040 D5	2067 E7	2110 B6	2135 B7	2318 E12	2340 A8	2370 B10	2700 B2	3004 D7	3022 E4
2023 E5	2046 E4	2068 E7	2112 B6	2137 B7	2319 E12	2341 A11	2514 B1	2701 B2	3005 C7	3023 F5
2026 F5	2047 E4	2069 D6	2113 B7	2138 B8	2320 E12	2342 B10	2515 D1	2702 D2	3006 D7	3024 F5
2027 F6	2049 E5	2070 E6	2114 B6	2139 B5	2321 E12	2343 B10	2504 C5	2703 A3	3007 D7	3025 E5
2028 E5	2051 E5	2071 D6	2117 B6	2142 A4	2322 E12	2344 E8	2605 C6	2704 A3	3008 C7	3026 E5





3-8

Settings on JFBU/SE

1. Chroma VCO (3126)

- Connect a frequencymeter to pin 4 of plug DE17
- Switch the recorder to the "standby" mode
- Adjust to 4.433619 MHz $\pm$ 20 Hz at the frequency meter

2. E-E level (3035)

- Connect a pattern generator to the Euroconnector and feed a white picture (program E1)
- Bring recorder into the "stop" position
- Connect an oscilloscope to pin 48 of IC7051
- Adjust the amplitude of the output voltage to 1,8 V_{SS} $\pm$ 0,05 V_{SS}

3. Luminance playback level (3033)

- Reproduce a white picture recorded on cassette
- Connect an oscilloscope to pin 48 of IC7051
- Adjust the amplitude of the output voltage to 1.8 V_{SS} $\pm$ 0,05 V_{SS}

4. Synchronisation frequency (3048)

- Bring unit into record mode
- Do not feed a signal (program E1)
- Connect a frequency meter to 10VS22
- Adjust to 3.8 MHz $\pm$ 15 kHz with (3048)

5. White clip, dark clip (3041,3049)

- Bring unit into stop mode
- Connect a pattern generator and feed a white picture (program E1)
- Connect an oscilloscope to connection 20 of IC7051
- Adjust the ratio U1/U2 = 0.87 $\pm$ 0,03 with 3041 (see Fig. 1)
- Adjust the ratio U3/U2 = 0,55 $\pm$ 0,03 with 3049 (see Fig. 1)

6. White frequency (3044)

- Connect a pattern generator and feed a white picture (program E1)
- Bring the recorder into the "record" mode
- Connect a frequency counter to the jack 10VS22
- Adjust to 4.6 MHz $\pm$ 15kHz with 3044

7. Drop-out sensitivity (3080)

method 1:

- Reproduce test cassette 4822 397 30108
 - Adjust 3080 so that the noise in surface A (see Fig. 2) just disappears during the drop-out test signal
- NB: The drop-out signal is only present on part of the test tape.

method 2:

- Connect Ya input of the oscilloscope to pin 6 of the LPS subprint

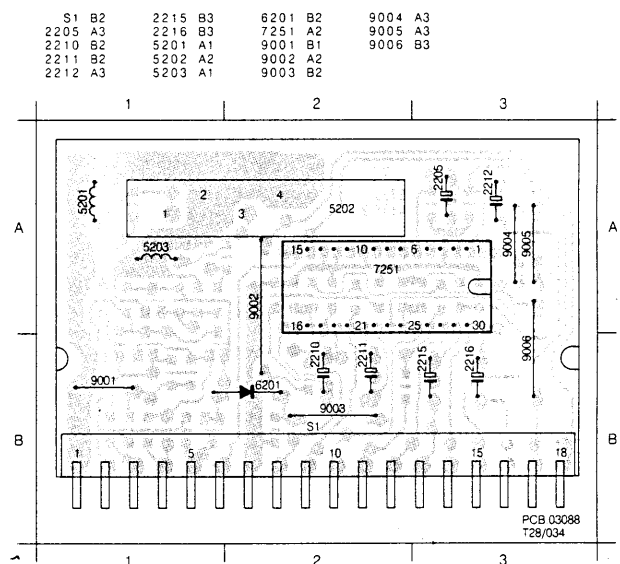
Connect Yb input of the oscilloscope to pin 16 of the LPS subprint

- Invert Yb at the oscilloscope and add to Ya
- Connect a pattern generator and feed a white picture (program E1)
- Bring the recorder into the "stop, LP" mode
- Set the signal difference of the white level to a minimum with 3080

8. Setting of the balance of the noise suppression (3072)

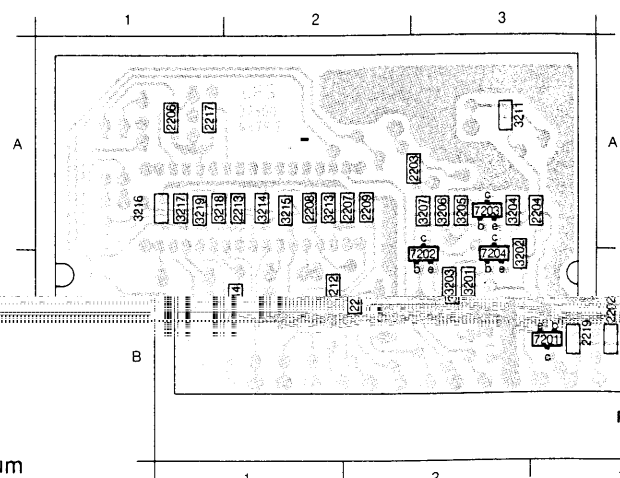
- Reproduce a white picture recorded on cassette
- Connect an oscilloscope to pin 9 of the LPS subprint
- Adjust the signal to a minimum with 3072

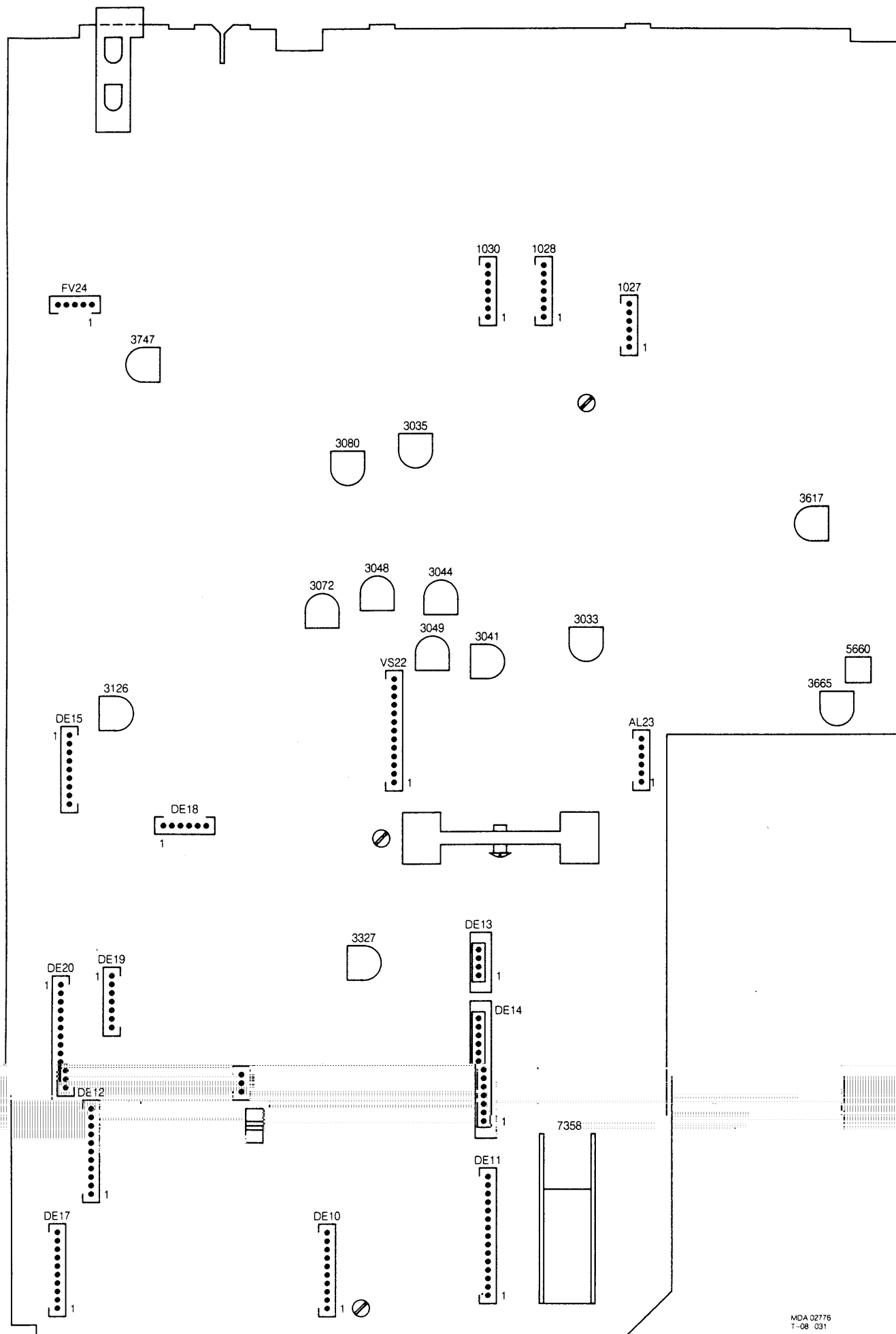
Longplay subprint LPS

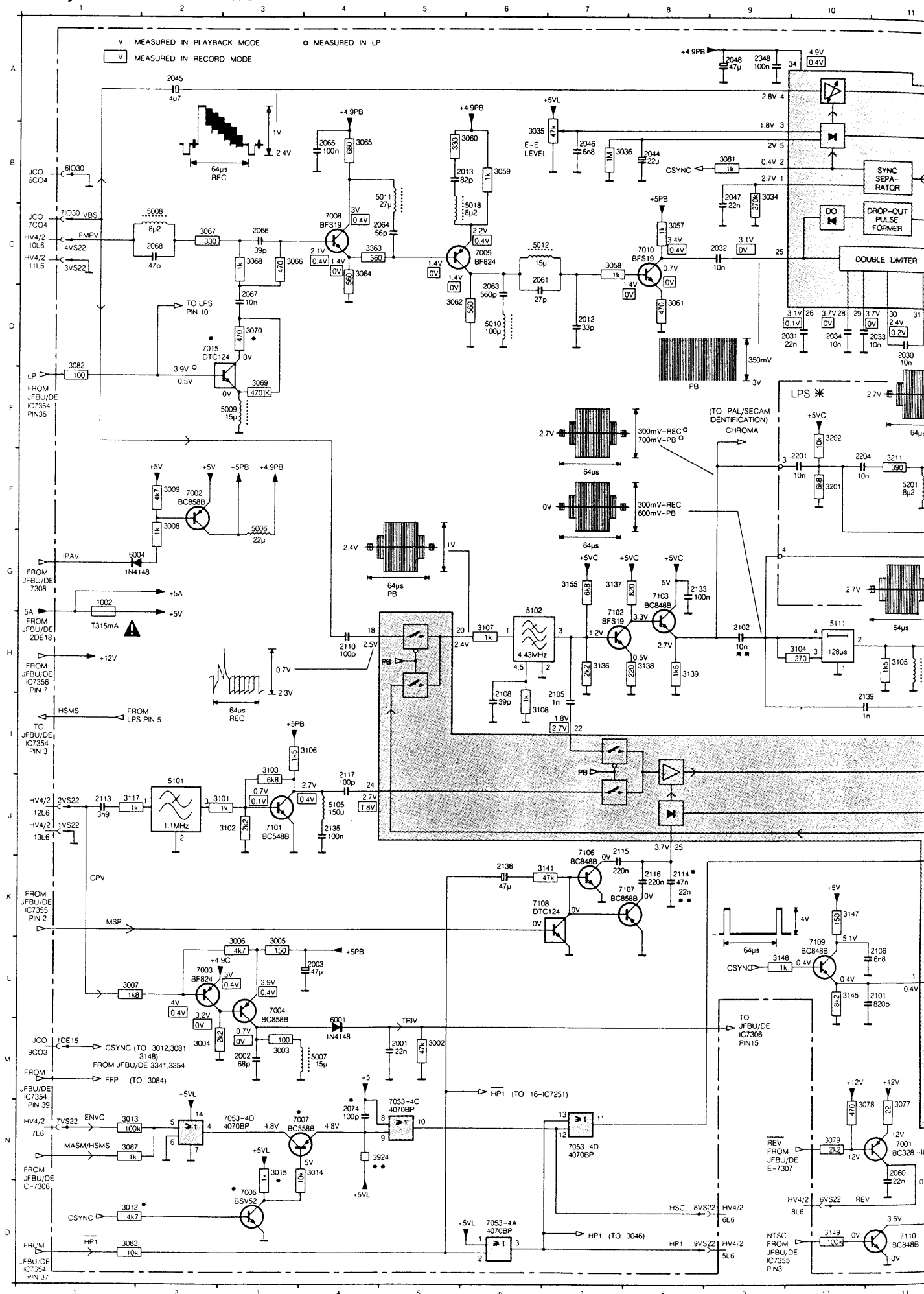


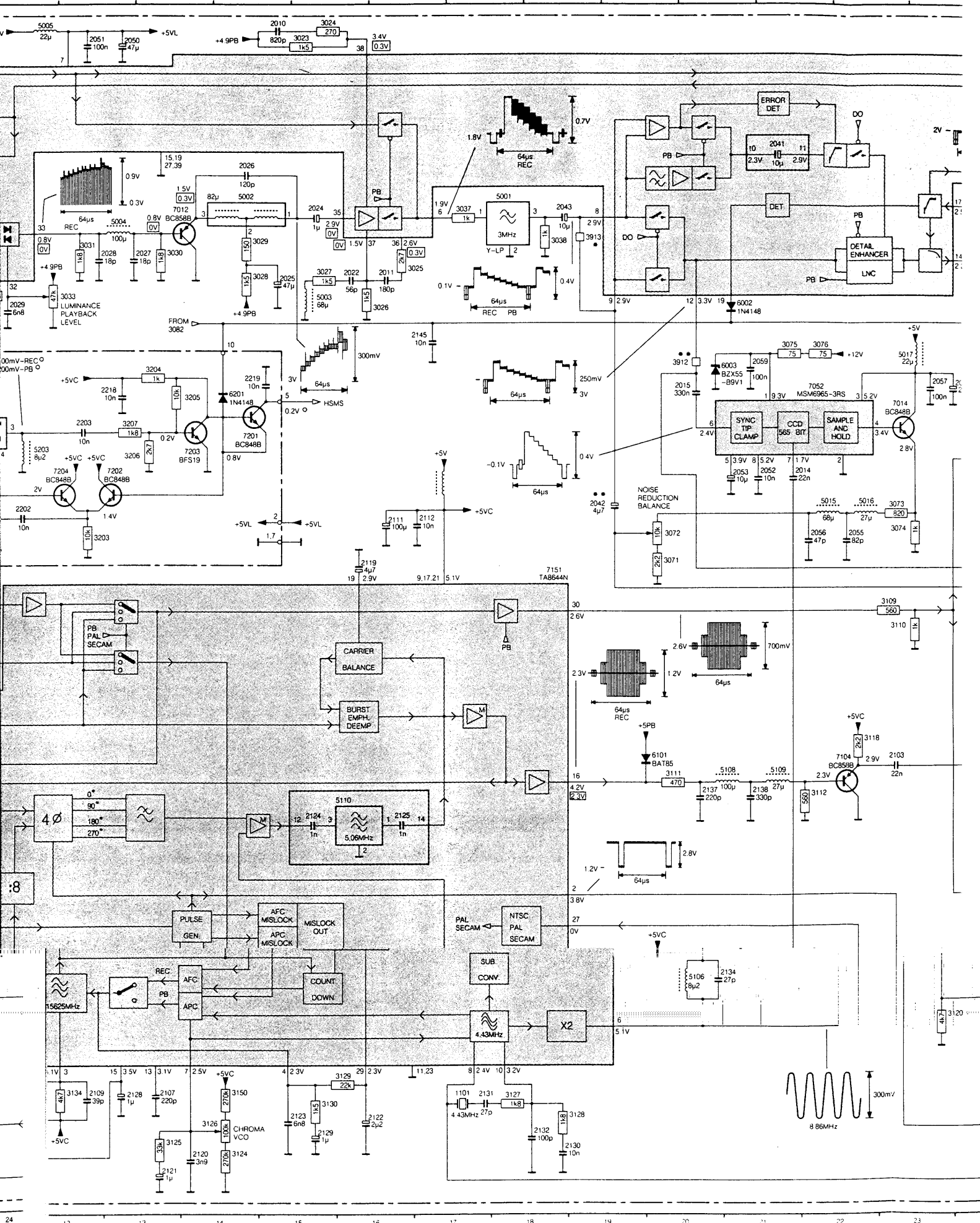
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MAURITRON SERVICES
 8 Cherry Tree Road, Chinnor
 Oxfordshire, OX9 4QY.
 Tel (01844) 351694
 Fax (01844) 352554
 email:- sales@mauratron.co.uk

2201 B3	2213 A2	3204 A3	3215 A2	7204 B3
2202 B3	2214 B2	3205 A3	3216 A1	
2203 A3	2217 A1	3206 A3	3217 A1	
2204 A3	2218 B3	3207 A3	3218 A1	
2206 A1	2219 B3	3211 A3	3219 A1	
2207 A2	3201 B3	3212 B2	7201 B3	
2208 A2	3202 B3	3213 A2	7202 B2	
2209 A2	3203 B3	3214 A2	7203 A3	

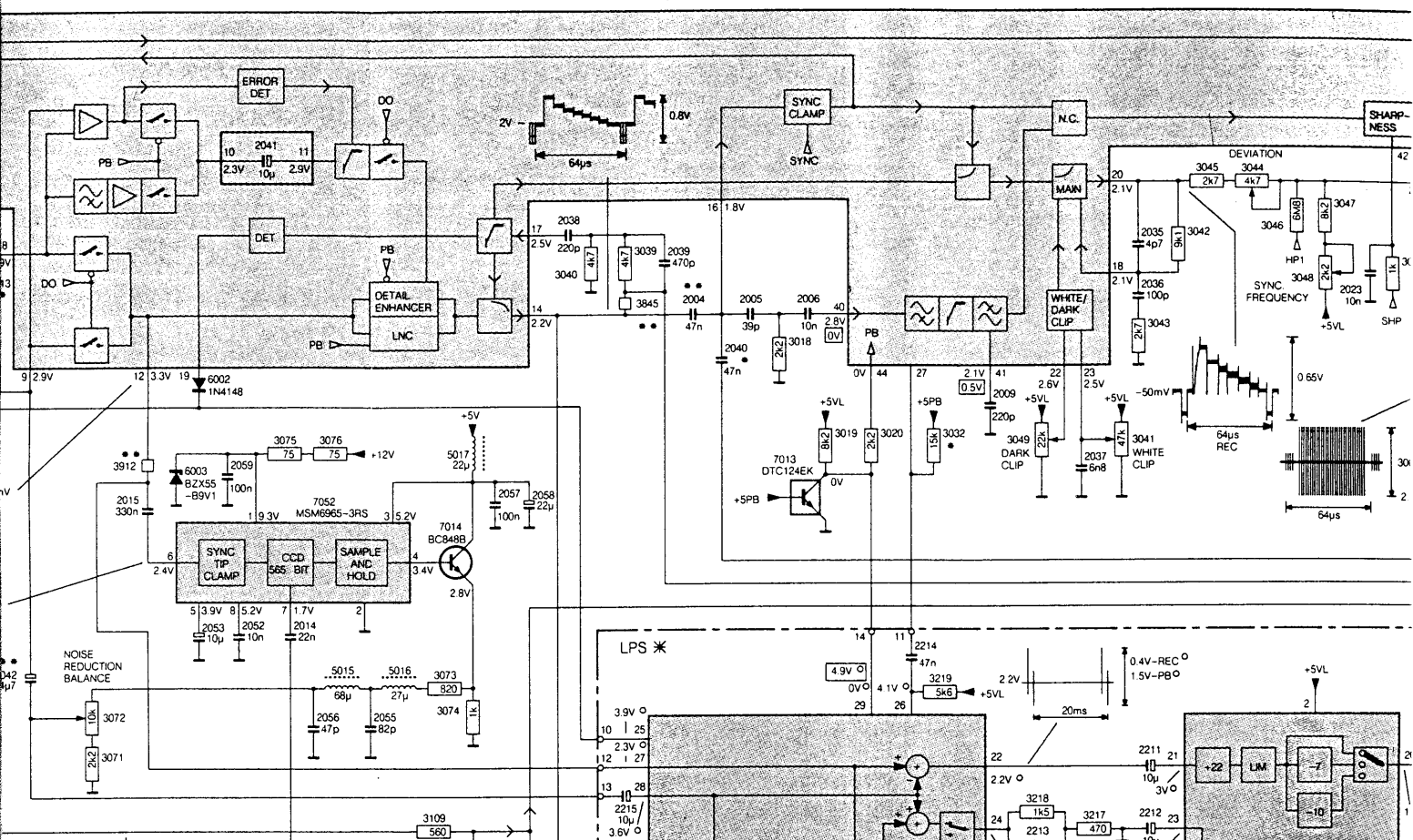


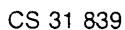




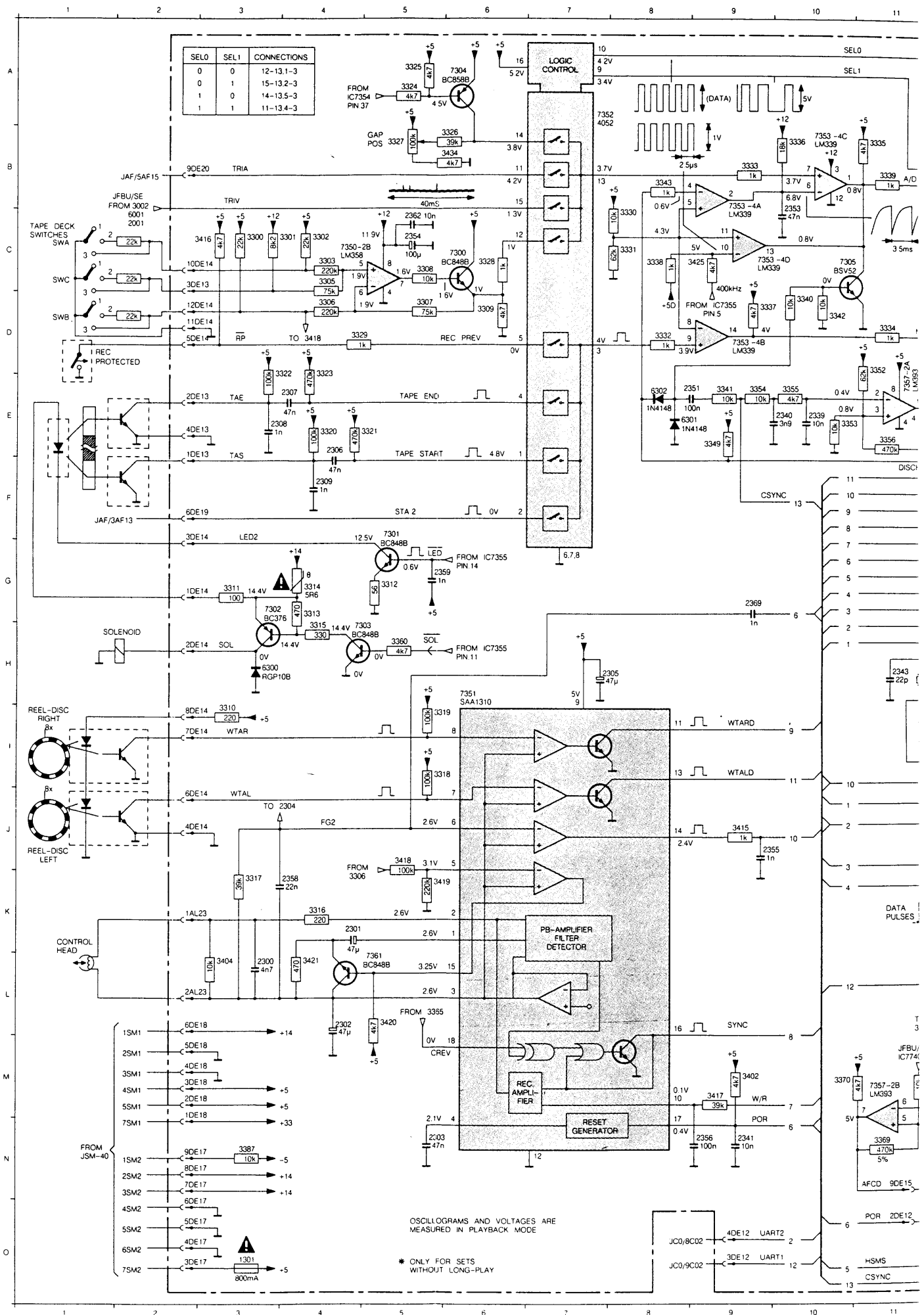


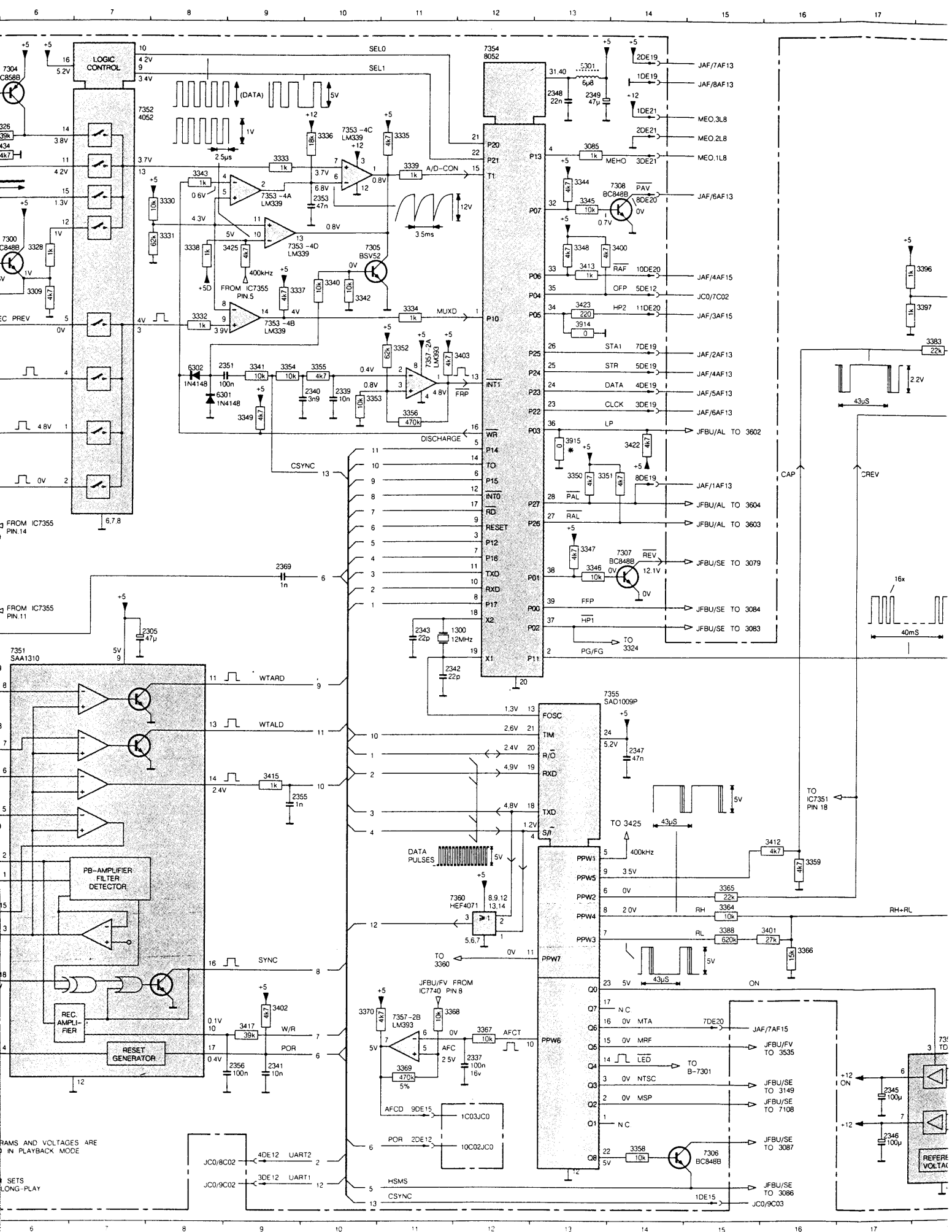
- ONLY FOR LP
- ONLY FOR SP

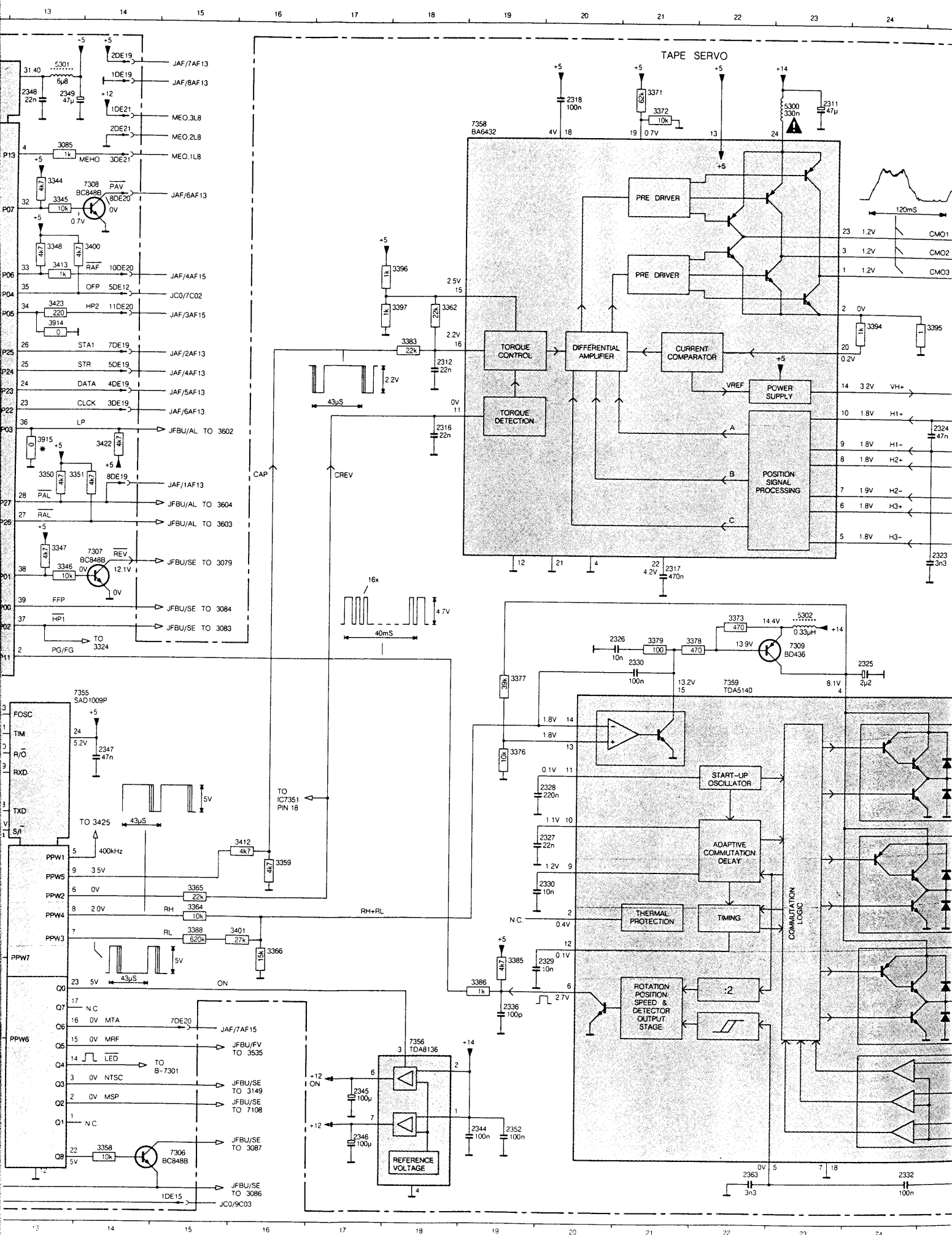


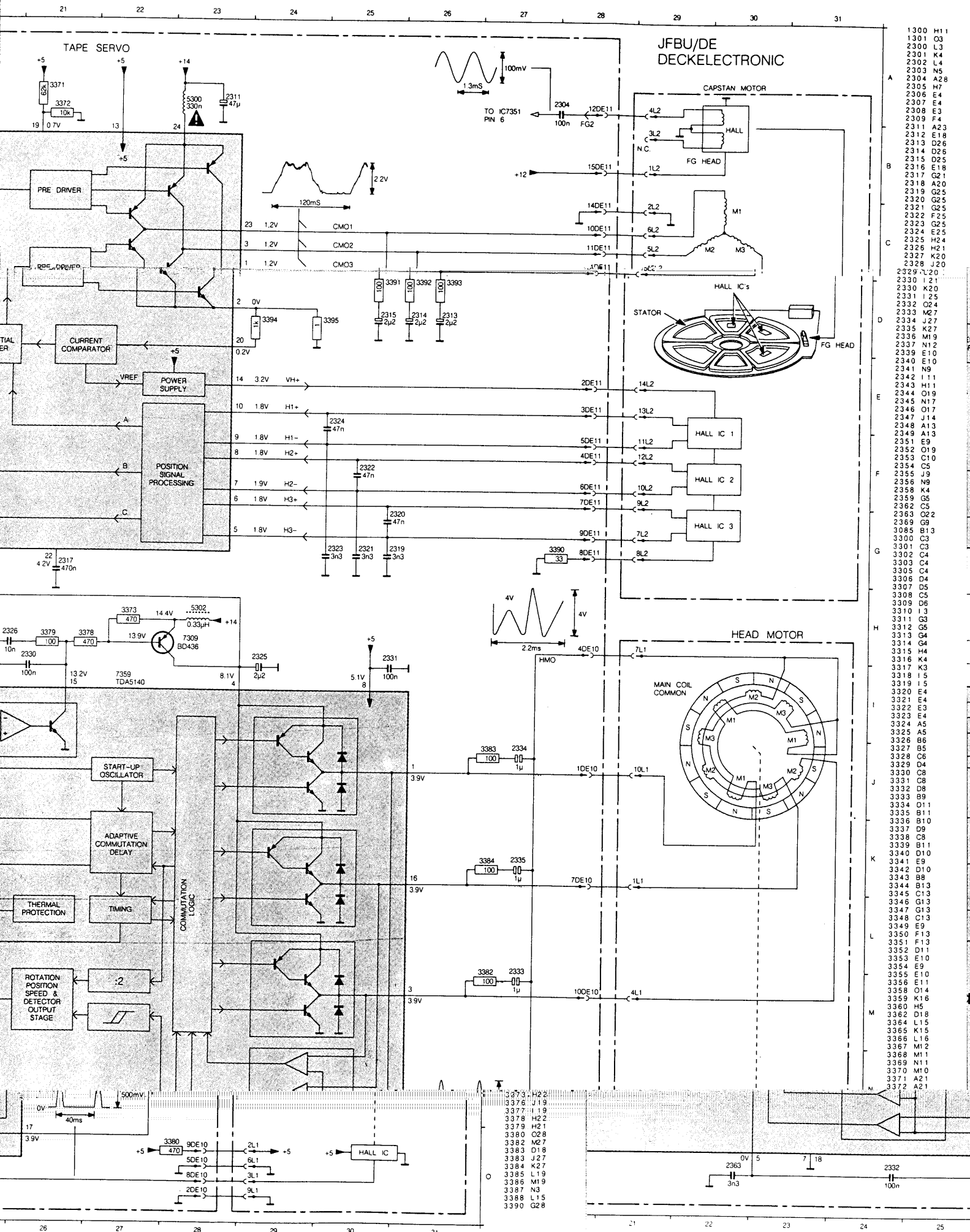


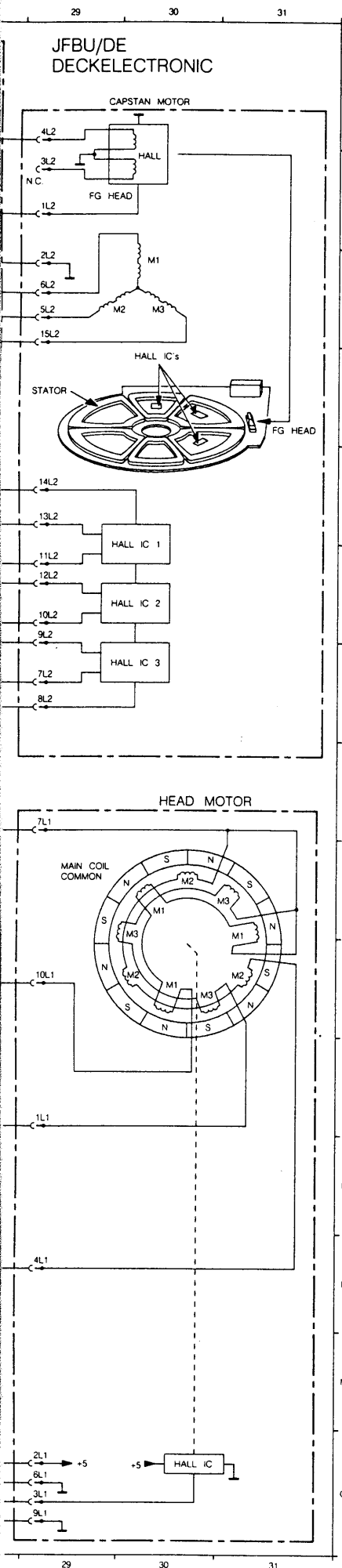
3-10 Family board unit JFBU/DE











1300	H11	3391	D25
1301	O3	3392	D26
2300	L3	3393	D26
2301	K4	3394	D24
2302	L4	3395	D25
2303	M5	3396	C18
2304	A28	3397	D18
2305	H7	3400	C14
2306	E4	3401	L16
2307	E4	3402	M9
2308	E3	3403	E11
2309	F4	3404	L3
2311	A23	3412	K16
2312	E18	3413	C13
2313	D26	3415	J9
2314	D26	3416	C2
2315	D25	3417	M9
2316	E18	3418	J5
2317	G21	3419	K5
2318	A20	3420	L5
2319	G25	3421	L4
2320	G25	3422	F14
2321	G25	3423	D13
2322	F25	3425	C8
2323	G25	3434	B6
2324	E25	3914	D13
2325	H24	3915	F13
2326	H21	5300	A23
2327	K20	5301	A13
2328	J20	5302	H23
2329	L20	6300	H3
2330	I21	6301	E8
2330	K20	6302	E8
2331	I25	7300	C6
2332	O24	7301	F5
2333	M27	7302	G3
2334	J27	7303	H5
2335	K27	7304	A6
2336	M19	7305	C10
2337	N12	7306	O15
2339	E10	7307	G14
2340	E10	7308	B14
2341	N9	7309	H23
2342	I11	7350	C4
2343	H11	7351	H6
2344	O19	7352	A7
2345	N17	7353	B10
2346	O17	7353	C9
2347	J14	7353	C9
2348	A13	7353	D9
2349	A13	7354	A12
2351	E9	7355	I13
2352	O19	7356	M18
2353	C10	7357	E11
2354	C5	7357	M11
2355	J9	7358	B19
2356	N9	7359	I22
2358	K4	7360	L11
2359	G5	7361	L5
2362	C5		
2363	O22		
2369	G9		
3085	B13		
3300	C3		
3301	C3		
3302	C4		
3303	C4		
3305	C4		
3306	D4		
3307	D5		
3308	C5		
3309	D6		
3310	I3		
3311	G3		
3312	G5		
3313	G4		
3314	G4		
3315	H4		
3316	K4		
3317	K3		
3318	I5		
3319	I5		
3320	E4		
3321	E4		
3322	E3		
3323	E4		
3324	A5		
3325	A5		
3326	B6		
3327	B5		
3328	C6		
3329	D4		
3330	C8		
3331	C8		
3332	D8		
3333	B9		
3334	D11		
3335	B11		
3336	B10		
3337	D9		
3338	C8		
3339	B11		
3340	D10		
3341	E9		
3342	D10		
3343	B8		
3344	B13		
3345	C13		
3346	G13		
3347	G13		
3348	C13		
3349	E9		
3350	F13		
3351	F13		
3352	D11		
3353	E10		
3354	E9		
3355	E10		
3356	E11		
3358	O14		
3359	K16		
3360	H5		
3362	D18		
3364	L15		
3365	K15		
3366	L16		
3367	M12		
3368	M11		
3369	N11		
3370	M10		
3371	A21		
3372	A21		
3373	H22		
3376	J19		
3377	I19		
3378	H22		
3379	H21		
3380	O28		
3382	M27		
3383	D18		
3383	J27		
3384	K27		
3385	L19		
3386	M19		
3387	N3		
3388	L15		
3390	G28		

Einstellung für die Deckelektronik

1. Positionseinstellung (3327) (GAP-Position)

- Ya-Eingang eines Oszilloskopes an den Pin 19 des Eurokonnektors 1 (Video-Ausgang) anschließen
- Yb-Eingang des Oszilloskopes an den Pin 9VS22 (HP1-Puls) anschließen
- Oszilloskop auf Yb triggern
- Testkassette 4822 397 30103 wiedergeben
- die "PLAY"-Taste während der Einstellung gedrückt halten
- 3327 so einstellen, daß die positiv verlaufende Flanke des HP1-Signals sich $416 \mu\text{s} \pm 32 \mu\text{s}$ (5,5 Linien) vor der Vorderflanke des Rasterimpulses befindet (siehe Fig. 1)

Setting for the deck electronics

1. Position setting (3327) (GAP position)

- Connect Ya input of an oscilloscope to pin 19 of the Euroconnector 1 (video output)
- Connect Yb input of the oscilloscope to pin 9VS22 (HP1 pulse)
- Trigger oscilloscope on Yb
- Play test cassette 4822 397 30103
- Keep "PLAY" key depressed during setting procedure
- Set 3327 so that the positive flank of the HP1 signal is $416 \mu\text{s} \pm 32 \mu\text{s}$ (5.5 lines) in front of the front flank of the frame impulse (see Fig. 1)

Instelling voor de deckelektronica

1. Positie-instelling (3327) (GAP-positie)

- Ya-ingang van een oscilloscoop op de pin 19 van de euroconnector 1 (video-uitgang) aansluiten
- Yb-ingang van de oscilloscoop op de pin 9VS22 (HP1-puls) aansluiten
- oscilloscoop op Yb triggeren
- testcassette 4822 397 30103 weergeven
- tijdens het instellen de "PLAY"-toets ingedrukt houden
- 3327 zodanig instellen dat de positief lopende flank van het HP-signaal zich $416 \mu\text{s} \pm 32 \mu\text{s}$ (5,5 lijnen) voor de voorflank van de rasterimpuls bevindt (zie figuur 1).

Ajustage pour l'électronique du chassis:

1. Réglage de la position (3327) (position GAP)

- brancher l'entrée Ya d'un oscilloscope sur la broche 19 de l'Euroconnecteur 1 (sortie image)
- brancher l'entrée Yb de l'oscilloscope sur la broche 9VS22 (HP1-Puls)
- déclencher l'oscilloscope à Yb
- reproduire la cassette d'essai 4822 397 30103
- maintenir la touche "PLAY" appuyée pendant le réglage
- régler 3327 de telle façon que le flanc en sens positif du signal HP1 se trouve en avance de $416 \mu\text{s} \pm 32 \mu\text{s}$ (5,5 lignes) sur le flanc avant de l'impulsion de trame (voir fig.1)

Ajustes de la electrónica del deck

1. Regulación de la posición (3327) (Posición GAP)

- Conectar una entrada Ya de un osciloscopio al clavija 19 del euroconector 1 (salida video)
- Conectar la entrada Yb del osciloscopio a la clavija 9VS22 (HP1-Puls)
- Pasar el osciloscopio a Yb
- Reproducir la cassette de prueba 4822 397 30103
- Mantener oprimida la tecla de "PLAY" durante la regulación.
- Regular 3327 de forma que el flanco positivo de la señal HP1 se encuentre $416 \mu\text{s} \pm 32 \mu\text{s}$ (5,5 líneas) antes del flanco delantero del impulso de cuadro (ver Fig.1).

Regolazione del Deck JFBU/DE

1. Regolazione della posizione (3327) (posizione-GAP)

- collegare l'entrata-Ya di un'oscilloscopio a Pin 19 del connettore Euro 1 (uscita video)
- collegare l'entrata-Yb dell'oscilloscopio a Pin 9VS22 (impulso HP1)
- triggerare l'oscilloscopio a Yb
- riprodurre la cassetta test 4822 397 30103
- tener premuto il tasto "PLAY" durante la regolazione
- regolare 3327 in modo che il fronte di salita del segnale HP1 sia in anticipo di $416 \mu\text{s} \pm 32 \mu\text{s}$ (5,5 righe) rispetto al fronte di discesa del sincronismo di quadro (veda fig. 1)

• PLAY ALIGNMENT CASSETTE

3-11

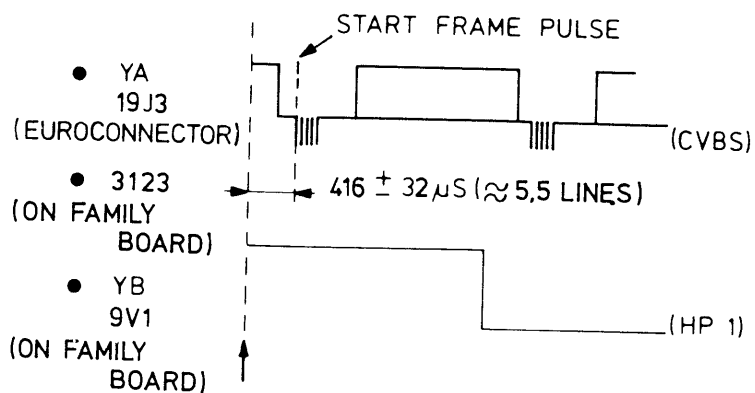
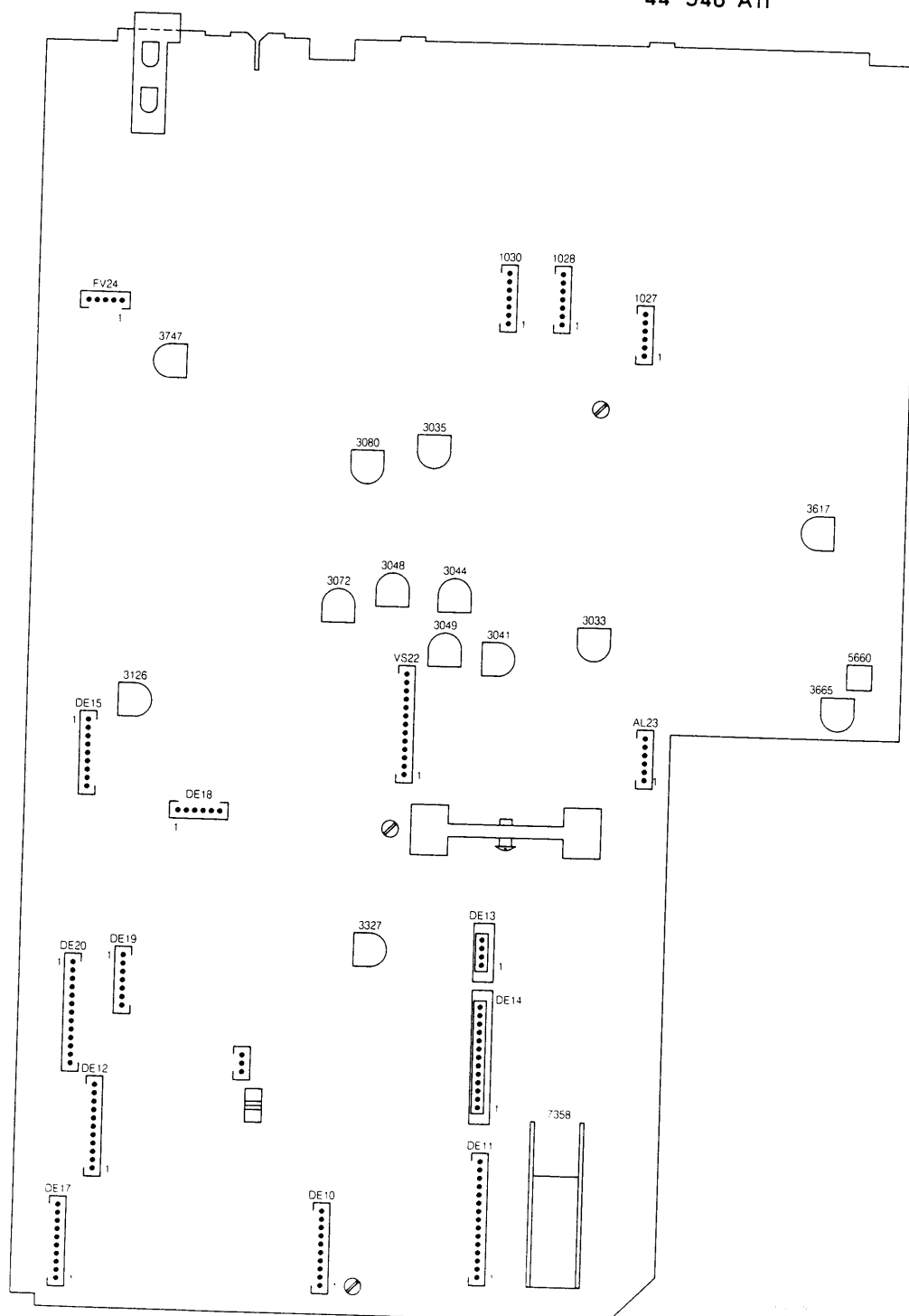


fig.1

44 548 A11



Einstellungen für den Linear - Audioteil JFBU/AL**1. Einstellung der Löschfrequenz (5660)**

- Frequenzmesser an den Widerstand 3665 schalten
- Gerät in Stellung "AUFNAHME" bringen.
- Mit Hilfe von 5660 die Löschfrequenz auf $70\text{kHz} \pm 500\text{Hz}$ einstellen.

2. Einstellung des Vormagnetisierungsstromes (BIAS) (3665)

- Millivoltmeter an 3630 anschließen (Differenzmessung)
- Gerät in Stellung "AUFNAHME" bringen
- Mit Hilfe von 3665 die Spannung an 3630 auf 10mVeff (70kHz) einstellen.

Kontrolle der Biaseinstellung

Nachdem der "BIAS" mit dem angegebenen Richtwert eingestellt worden ist, ist eine Musikaufnahme nur mit Linear-Audio zu machen. Verwenden Sie Cassetten von bekannten Herstellern, jedoch kein Chromdioxiband. Bei der Wiedergabe dieser Aufnahme muß man nun darauf achten, ob in ausreichendem Maße Höhen wiedergegeben werden oder, ob der Klang keiner Verzerrung unterliegt. Wenn der Höhenanteil zu gering ist, muß der "BIAS"-Strom reduziert werden, wenn die Verzerrung zu groß ist, muß er erhöht werden.

3. Wiedergabe - Amplitudeneinstellung (3617)

- Aufnahme eines Signals (500mVeff , 1kHz) nur mit Linear-Audio machen
- Millivoltmeter an den Cinch-Audio-Ausgang schalten
- Wiedergabe dieser Aufnahme
- Mit 3617 die Wiedergabe-Amplitude auf 500mVeff einstellen

Settings for the linear audio component JFBU/AL**1. Einstellung der Löschfrequenz (5660)**

– Connect frequency meter to resistor 3665

– Bring unit into mode "RECORD"

– Set erasing frequency to $70\text{kHz} \pm 500\text{Hz}$ with 5660

2. Einstellung des Vormagnetisierungsstromes (BIAS) (3665)

– Connect millivoltmeter to 3630 (differential measurement)

– Bring unit into mode "RECORD"

– Set voltage at 3660 to 10mVeff (70kHz) with 3665.

Checking the bias setting

After "BIAS" has been set with the indicated approximate value, make a music recording with linear audio alone. Use cassettes made by well-known manufacturers, but do not use chromium dioxide tape. When reproducing this recording, note whether the highs are sufficiently reproduced or whether the sound is not subject to distortion. If the share of the highs is not sufficient, the "BIAS" current must be reduced; if distortion is too great, it must be increased.

3. Playback - amplitude setting (3617)

- Record a signal (500mVeff , 1kHz) with linear audio alone
- Connect millivoltmeter to the cinch audio output
- Reproduce this recording
- Set the playback amplitude to 500mVeff with 3617

– Record a signal (500mVeff , 1kHz) with linear audio alone

– Connect millivoltmeter to the cinch audio output

– Reproduce this recording

– Set the playback amplitude to 500mVeff with 3617

Instellingen voor het lineair-audiogedeelte JFBU/AL**1. Instelling van de wisfrequentie (5660)**

- frequentiemeter over de weerstand 3665 aansluiten
- toestel op "OPNAME" schakelen
- met behulp van 5660 de wisfrequentie op $70\text{kHz} \pm 500\text{Hz}$ instellen.

2. Instelling van de voormagnetiseringsstroom (BIAS) (3665)

- millivoltmer over 3630 aansluiten (differentiaalmeting)
- toestel op "OPNAME" schakelen
- met behulp van 3630 de spanning op 10mVeff (70kHz) instellen.

Controle van de biasinstelling

Nadat de "BIAS" op de aangegeven richtwaarde is ingesteld, kan een muziekopname uitsluitend met lineair-audio worden gemaakt. Gebruik hiervoor cassettes van een bekend merk, maar geen chromdioxideband. Bij de weergave van deze opname dient men erop te letten of de hoge tonen in voldoende mate worden weergegeven en of het geluid niet vervormd klinkt. Is het aandeel hoge tonen te klein, dan moet de "BIAS"-stroom worden gereduceerd, als het geluid te sterk vervormd klinkt, dan moet deze worden vergroot.

3. Instelling van de weergave-amplitudes (3617)

- opname van een signaal (500mVeff , 1kHz) alleen maken met lineair-audio
- millivoltmer op de cinch-audio-uitgang aansluiten
- weergave van deze opname
- met behulp van 3617 de weergave-amplitude op 500mVeff instellen.

Réglages de la section son linéaire JFBU/AL**1. Réglage de la fréquence d'effacement (5660)**

– Connect frequency meter to resistor 3665

– Bring unit into mode "RECORD"

– Set erasing frequency to $70\text{kHz} \pm 500\text{Hz}$ with 5660

2. Setting of the bias current (BIAS) (3665)

– Connect millivoltmeter to 3630 (differential measurement)

– Bring unit into mode "RECORD"

– Set voltage at 3660 to 10mVeff (70kHz) with 3665.

Checking the bias setting

After "BIAS" has been set with the indicated approximate value, make a music recording with linear audio alone. Use cassettes made by well-known manufacturers, but do not use chromium dioxide tape. When reproducing this recording, note whether the highs are sufficiently reproduced or whether the sound is not subject to distortion. If the share of the highs is not sufficient, the "BIAS" current must be reduced; if distortion is too great, it must be increased.

3. Playback - amplitude setting (3617)

- Record a signal (500mVeff , 1kHz) with linear audio alone
- Connect millivoltmeter to the cinch audio output
- Reproduce this recording
- Set the playback amplitude to 500mVeff with 3617

– Record a signal (500mVeff , 1kHz) with linear audio alone

– Connect millivoltmeter to the cinch audio output

– Reproduce this recording

– Set the playback amplitude to 500mVeff with 3617

– Connect frequency meter to resistor 3665

– Bring unit into mode "RECORD"

– Set erasing frequency to $70\text{kHz} \pm 500\text{Hz}$ with 5660

2. Réglage du courant de polarisation (BIAS) (3665)

– Connect millivoltmeter to 3630 (differential measurement)

– Bring unit into mode "RECORD"

– Set voltage at 3660 to 10mVeff (70kHz) with 3665.

Checking the bias setting

Après avoir effectué le réglage du BIAS sur la valeur indiquée ci-dessus, procédez à un enregistrement musical. Utilisez à cet effet une cassette de bonne marque, mais pas de bande au dioxyde de chrome. Lors de la lecture de cet enregistrement, vérifiez si les aigus sont suffisamment restitués et que le son ne subit pas de distorsion. Si la part des aigus est insuffisante, réduire le courant BIAS; si la distorsion est trop importante, augmenter le courant BIAS.

3. Réglage de l'amplitude de lecture (3617)

- effectuer l'enregistrement d'un signal (500mVeff , 1kHz) avec le son linéaire seulement
- brancher un millivoltmètre sur la sortie Cinch-Audio
- lire l'enregistrement
- ajuster l'amplitude de lecture sur 500mVeff avec le 3617

Ajustes del circuito de audio lineal JFBU/AL

1. Regulación de la frecuencia de borrado (5660)

- Conectar un frecuencímetro a la resistencia 3665
- Colocar el aparato en posición de "GRABACION" (Aufnahme)
- Con ayuda de 5660, regular la frecuencia de borrado a $70\text{kHz} \pm 500\text{Hz}$

2. Regulación de la corriente de premagnetización (BIAS) (3665)

- Conectar el milivoltímetro a 3630 (medición diferencial)
- Colocar el aparato en posición de "GRABACION"
- Con ayuda de 3665, regular la tensión de 3630 a 10 mVeff (70kHz).

Control de la regulación de BIAS

Una grabación musical sólo puede realizarse con audio lineal después de regular el "BIAS" (polarización) con el valor normativo. Deben utilizarse casetes de marcas conocidas, pero no cintas de dióxido de cromo. Al reproducir la grabación hay que observar si los tonos agudos se reproducen suficientemente o si hay alguna distorsión del sonido. Cuando la parte de tonos agudos es deficiente, debe reducirse la corriente del "BIAS", cuando la distorsión es demasiado grande, hay que aumentarla.

3. Regulación de amplitud de reproducción (3617)

- Grabación de una señal (500 mVeff, 1kHz) sólo con audio lineal
- Conectar el milivoltímetro a la salida CINCH-audio
- Reproducción de esa grabación
- Regular con 3617 la amplitud de la reproducción a 500 mV.

Regolazioni per la parte audio lineare JFBU/AL

1. Regolazione della frequenza di cancellazione (5660)

- collegare il frequenzimetro al potenziometro 3665
- portare il registratore in posizione "REGISTRAZIONE"
- regolare la frequenza di cancellazione a $70\text{kHz} \pm 500\text{Hz}$ con l'aiuto di 5660

2. Regolazione della corrente di premagnetizzazione (BIAS) (3665)

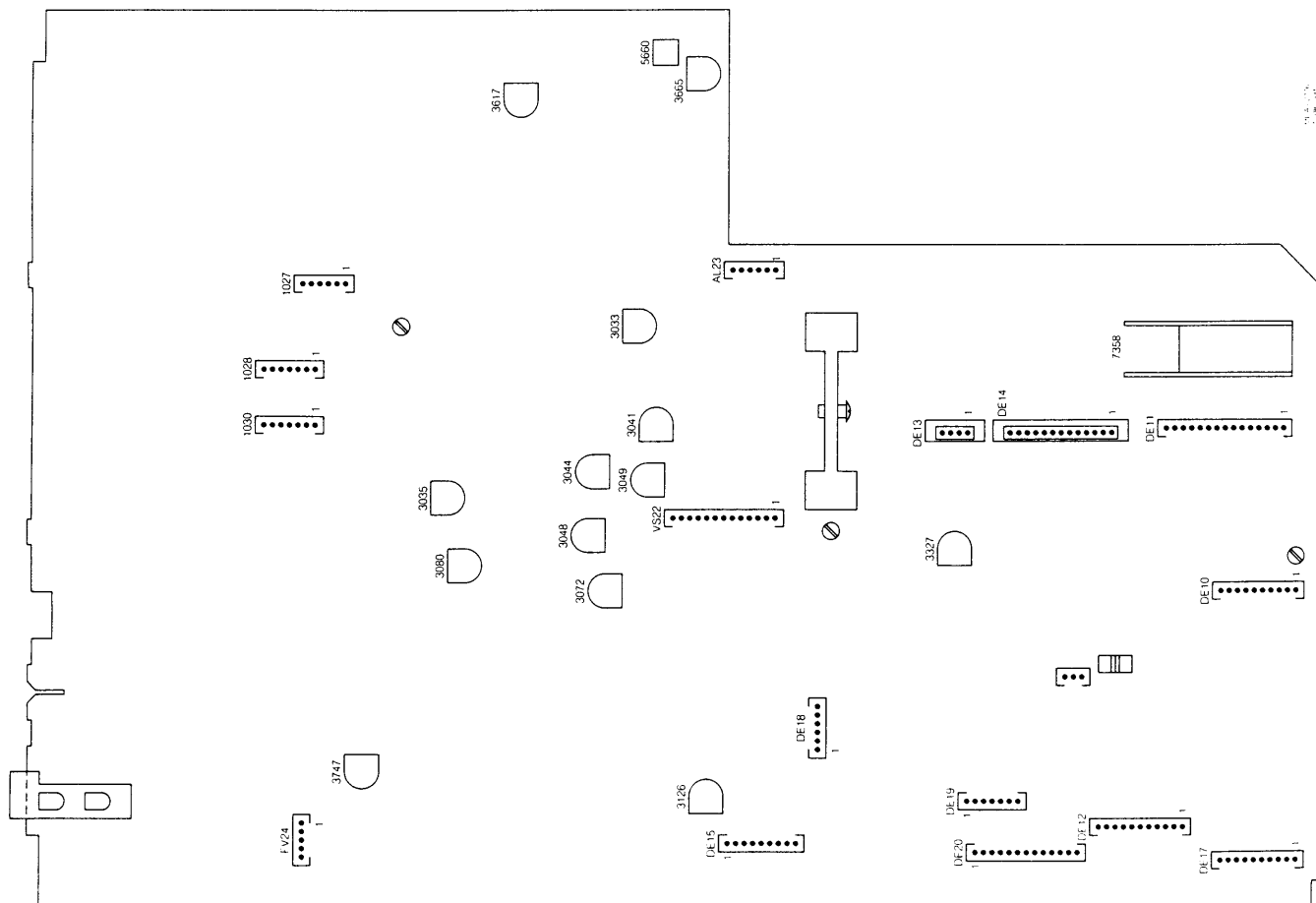
- collegare un millivoltmetro a 3630 (misurazione differenziale)
- portare l'apparecchio in posizione "REGISTRAZIONE"
- regolare la tensione (a 3630) a 10mVeff (70kHz) con l'aiuto di 3665

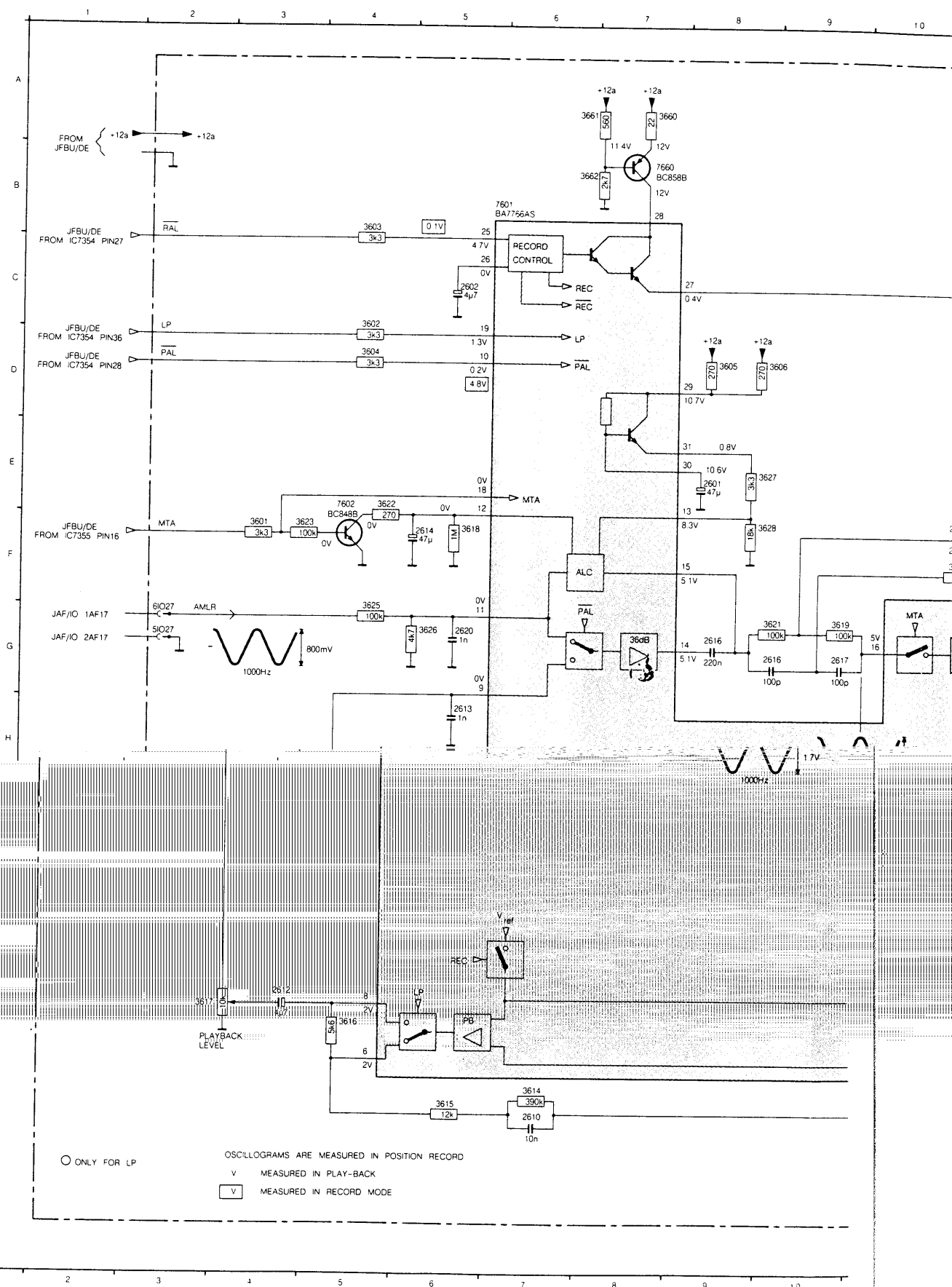
Controllo della regolazione BIAS (corrente di premagnetizzazione)

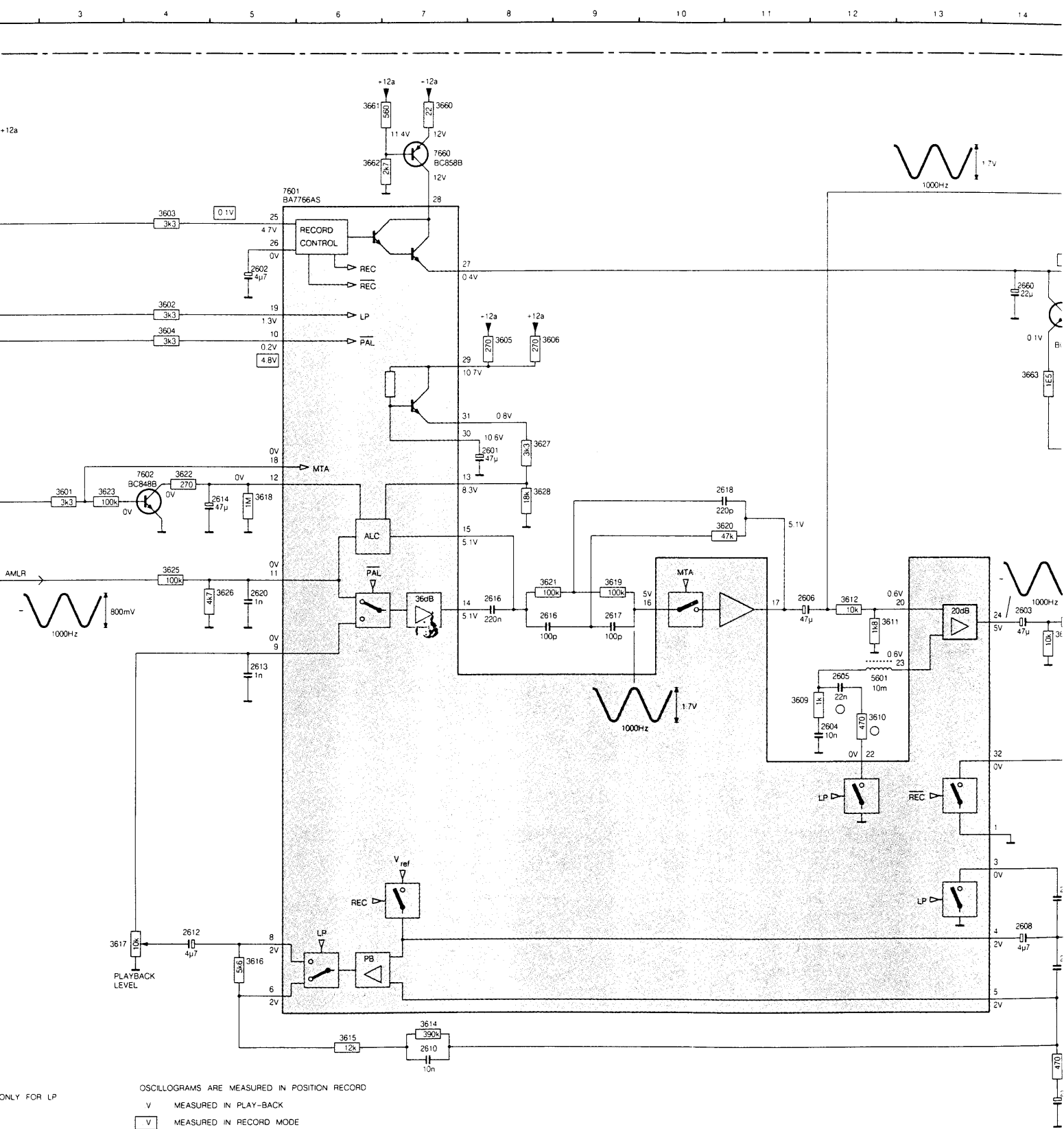
Dopo aver regolato il "BIAS" con il valore indicato bisogna fare una registrazione di musica soltanto con audio lineare. Usi cassette di produttori noti (non nastri "Chrom-dioxyd"). Durante la riproduzione di questa registrazione bisogna controllare se vengono riprodotte sufficientemente le frequenze alte e se il suono non viene distorto. Se il livello delle frequenze alte è basso bisogna ridurre un poco la corrente di premagnetizzazione. Se la distorsione è troppo grande bisogna aumentare un poco la corrente di premagnetizzazione.

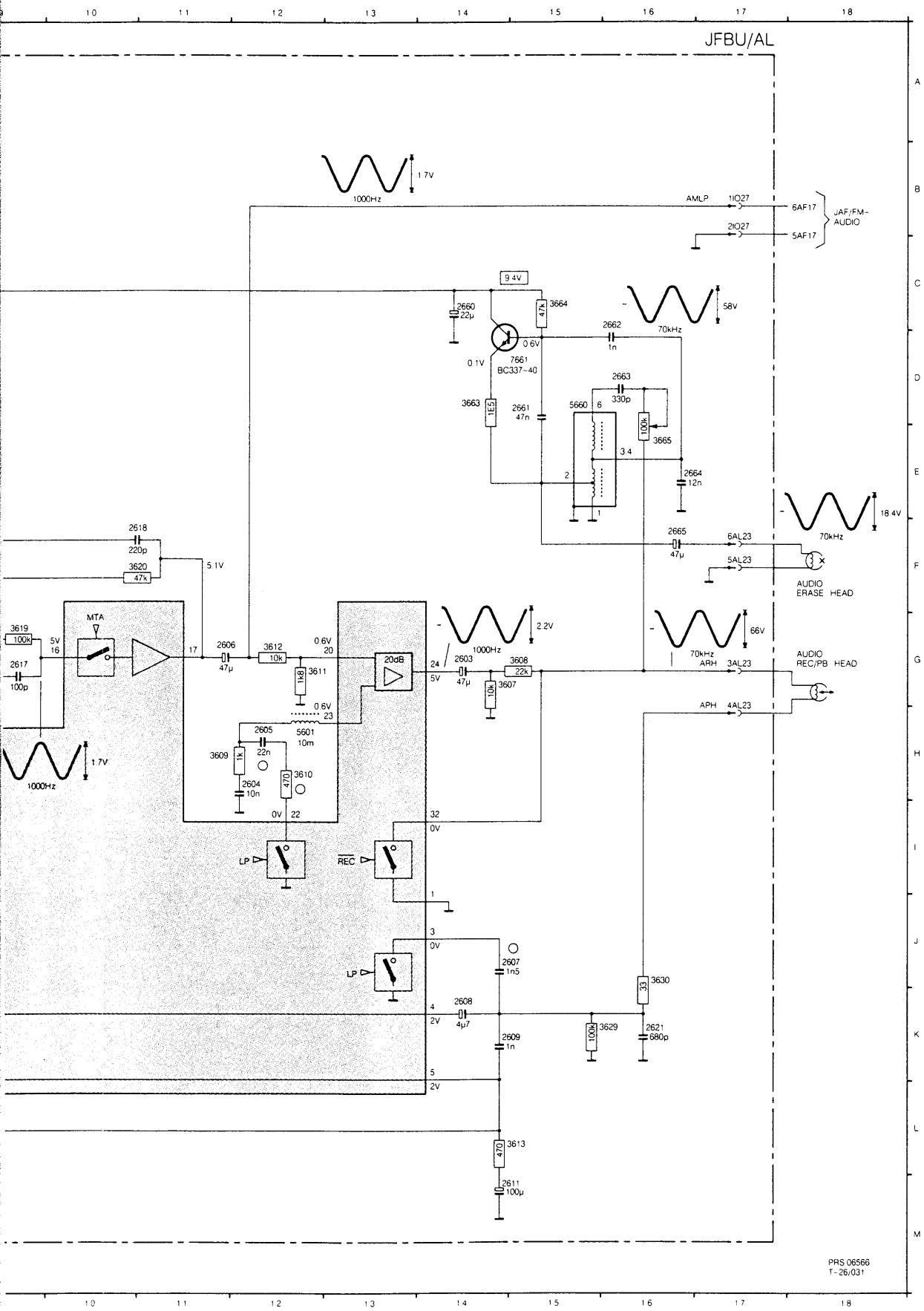
3. Regolazione dell'ampiezza (3617) durante la riproduzione

- registrare un segnale (500mVeff, 1kHz) soltanto con audio lineare
- collegare un millivoltmetro all'uscita Audio-Cinch
- riprodurre questa registrazione
- regolare con 3617 l'ampiezza di registrazione a 500mVeff

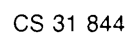


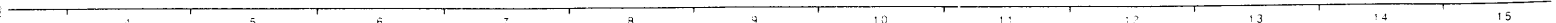


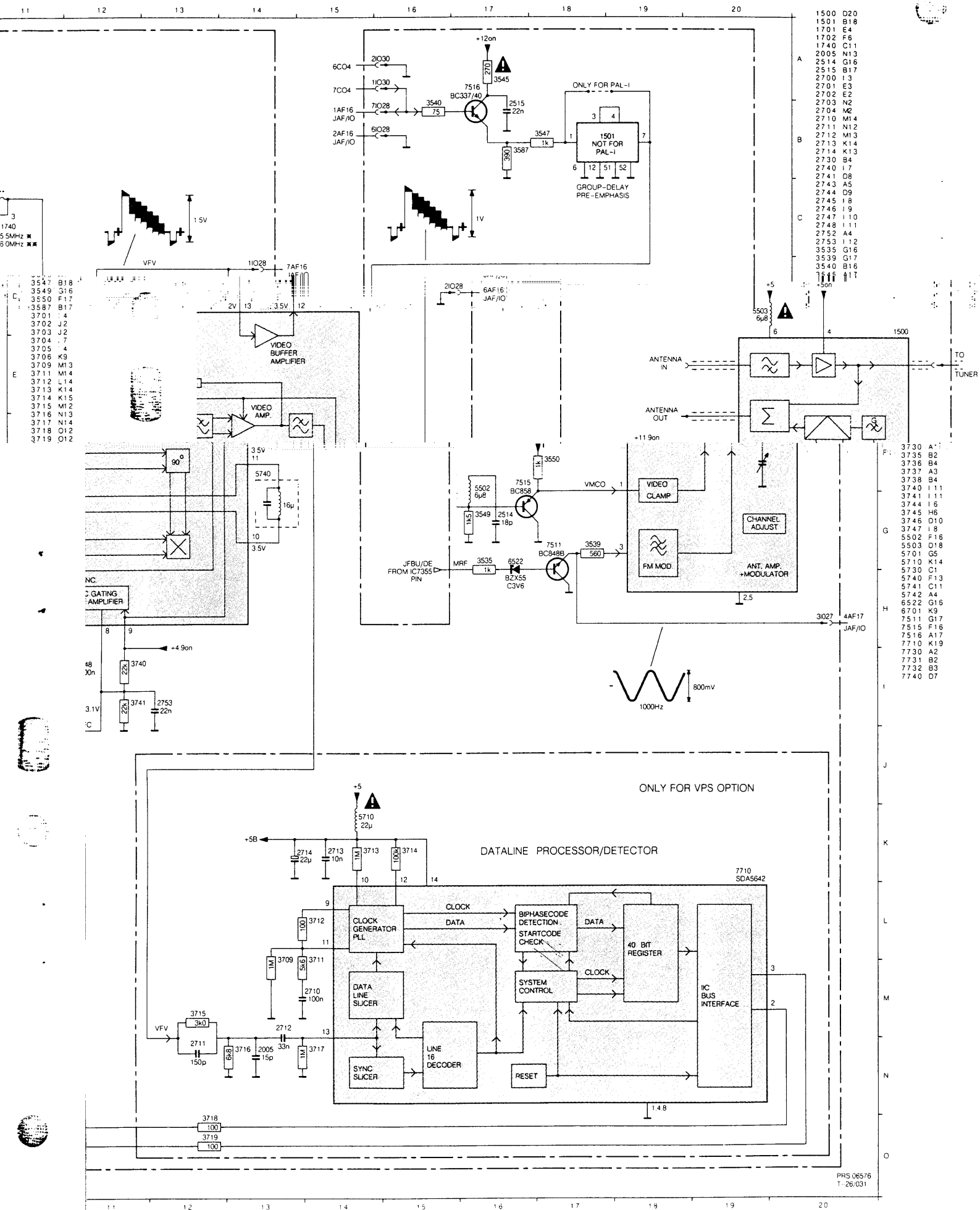




- 2601 E8
- 2602 C5
- 2603 G14
- 2604 H12
- 2605 H12
- 2606 G11
- 2607 J14
- 2608 K14
- 2609 K14
- 2610 L7
- 2611 M14
- 2612 K4
- 2613 H5
- 2614 F5
- 2615 G8
- 2616 G8
- 2617 G9
- 2618 F11
- 2619 F11
- 2620 G5
- 2621 K16
- 2622 C14
- 2623 D15
- 2624 C16
- 2625 D16
- 2626 E16
- 2627 F16
- 2628 F3
- 2629 C4
- 2630 B4
- 2631 B4
- 2632 D4
- 2633 D8
- 2634 D8
- 2635 G14
- 2636 G15
- 2637 H11
- 2638 H12
- 2639 G12
- 2640 L14
- 2641 L7
- 2642 L6
- 2643 K5
- 2644 K4
- 2645 F5
- 2646 G9
- 2647 F11
- 2648 G8
- 2649 E4
- 2650 F3
- 2651 G4
- 2652 G5
- 2653 E8
- 2654 F8
- 2655 K15
- 2656 A7
- 2657 A6
- 2658 B6
- 2659 D14
- 2660 C15
- 2661 E16
- 2662 H12
- 2663 D15
- 2664 B5
- 2665 E4
- 2666 B7
- 2667 D15

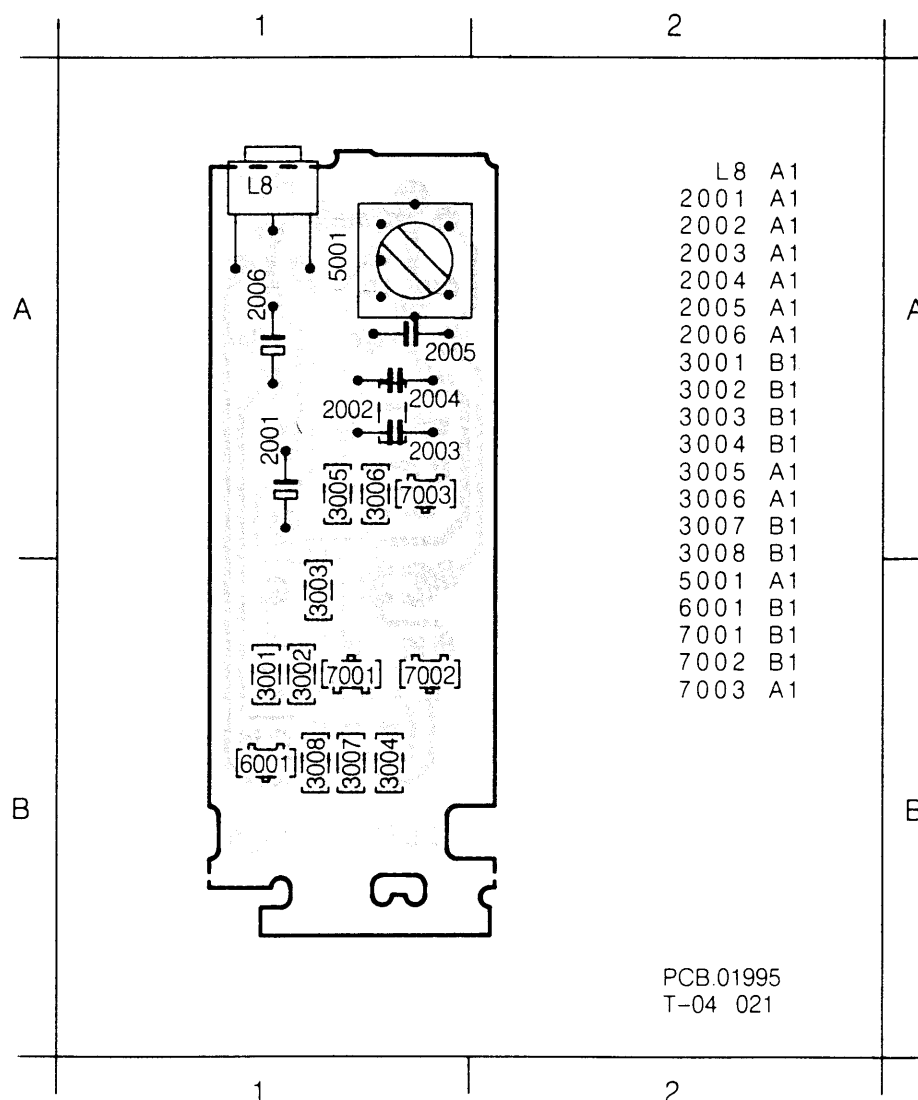
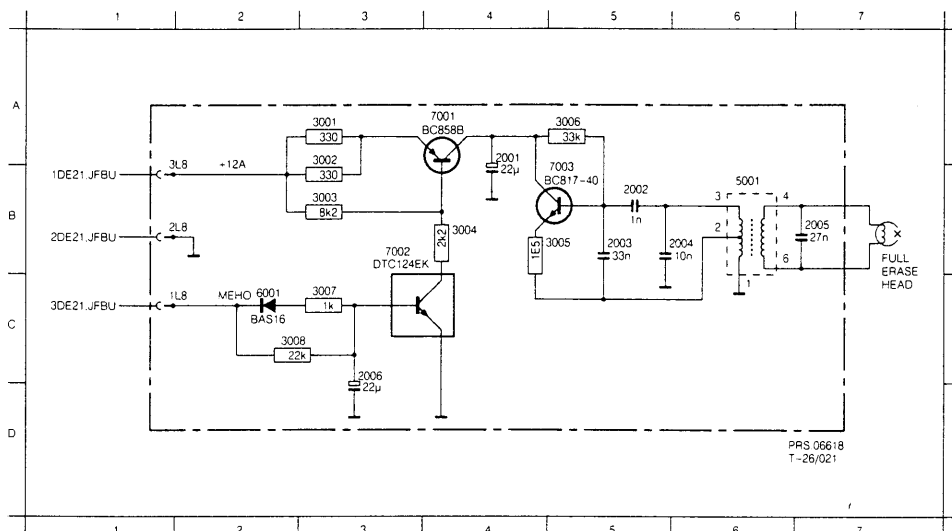






Main erase oscillator MEO

2001 A 4	2004 B 6	3001 A 3	3004 B 4	3007 C 3	6001 C 2	7003 B 5
2002 B 5	2005 B 7	3002 A 3	3005 B 5	3008 C 2	7001 A 4	
2003 B 5	2006 C 3	3003 B 3	3006 A 5	5001 B 6	7002 B 3	



Adjustments on MEO

1.1 Adjustments of the erase frequency

- Select the record mode
- Measure on the erase head by means of a frequency meter
- Adjust 5001 for a frequency of 70 kHz $\pm$ 10 kHz

Instellingen op Meo

1.1 Instelling van de wisfrequentie

- De videorecorder in de recordermodus brengen
- Met een frequentiemeter aan de wiskop meten
- Met 5001 de frequentie op 70 kHz $\pm$ 10 kHz instellen

Réglages à la MEO

1.1 Réglage de la fréquence d'effacement

- Mettez l'appareil au mode REC
- Mesurez la tête d'effacement à l'aide d'un fréquencemètre
- A l'aide de 5001, réglez la fréquence à 70 kHz $\pm$ 10 kHz

Einstellungen an MEO

1.1 Einstellung der Löschfrequenz

- Bringen Sie den Video-Recorder in den Rec-Mode
- Messen Sie mit einem Frequenzzhler am Löschkopf
- Stellen Sie mit 5001 die Frequenz auf 70 kHz $\pm$ 10 kHz ein

Regolazioni su MEO

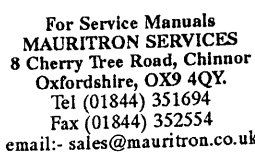
1.1 Regolazioni della frequenza di cancellazione

- Porti il video-registratore in posizione REC
- Misuri con un frequenzimetro alla testina di cancellazione
- Regoli con 5001 la frequenza a 70 kHz $\pm$ 10 kHz

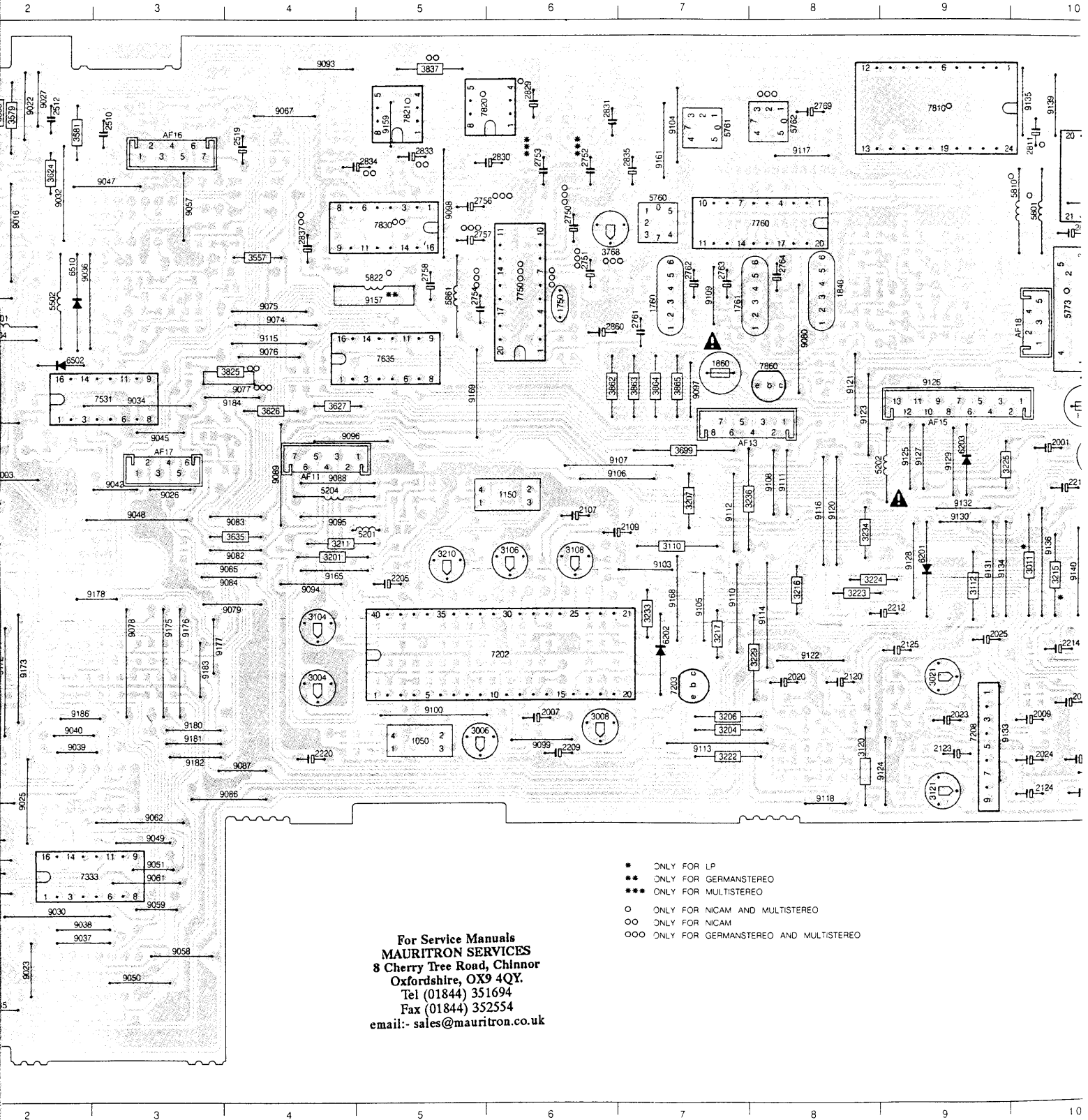
Ajustes en MEO

1.1 Ajuste de la frecuencia borradora

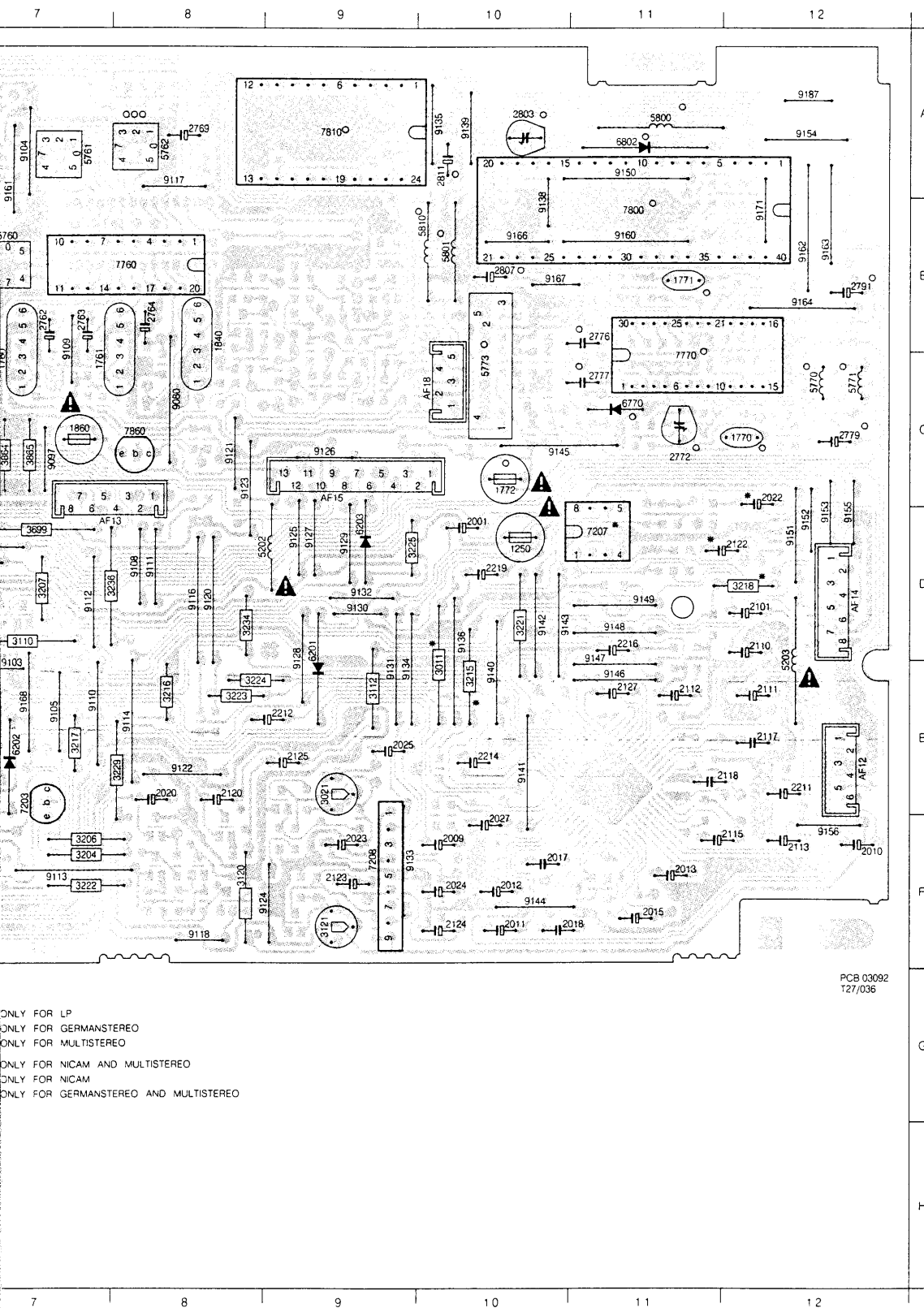
- Ponga el registrador en posición REC
- Mida con un frecuencimetro en la cabeza borradora
- Ajuste con 5001 la frecuencia a 70 kHz $\pm$ 10 kHz



2216 D11	2763 B7	2837 B4	3207 D7	3355 E1	3635 D4	5762 A8	6407 B1	7202 E6	7860 C8	9022 A2	9047 B3	9080 C8	9103 E7
2219 D10	2764 B8	2860 C6	3210 D5	3382 B1	3699 D7	5770 C12	6414 D1	7203 E7	9003 C2	9023 H2	9048 D3	9082 D4	9104 A7
2220 F4	2769 A8	3004 E4	3211 D4	3384 C1	3768 B6	5771 C12	6415 D1	7207 D11	9004 C2	9025 F2	9049 D3	9083 D4	9105 E7
2510 A3	2772 C11	3008 F5	3216 E8	3461 E1	3825 C3	5773 C10	6502 C2	7208 F9	9005 F1	9026 D3	9050 H3	9084 E3	9106 D6
2512 A2	2776 B11	3008 F6	3216 E8	3465 E1	3837 A5	5800 A11	6504 D1	7333 G2	9006 H2	9027 A2	9051 G3	9085 E3	9107 D6
2519 A4	2777 C11	3011 E10	3217 E7	3482 B1	3862 C6	5801 B10	6505 D1	7521 B2	9007 G2	9030 G2	9057 B3	9086 F3	9108 D8
2620 G1	2779 C12	3021 E9	3218 D12	3484 B1	3863 C7	5810 B10	6510 B2	7531 C3	9008 D1	9032 B2	9058 G3	9087 F4	9109 C7
2750 B6	2791 B12	3104 E4	3221 D10	3502 C1	3864 C7	5822 B5	6512 F1	7608 A1	9009 G1	9033 G1	9059 G3	9088 D4	9110 E7
2751 B6	2803 A10	3106 D6	3222 F7	3557 B4	3865 C7	5861 C5	6513 F1	7635 C5	9010 E1	9034 C3	9061 G3	9089 D4	9111 D8
2752 B6	2807 B10	3108 D6	3223 E8	3567 C1	5201 D5	6201 E9	6601 C1	7750 G8	9011 A1	9035 H2	9062 F3	9093 A4	9112 D7
2753 B6	2811 A10	3110 D7	3224 E8	3579 A2	5202 D9	6202 E7	6603 A1	7750 B8	9012 H3	9036 B2	9067 A4	9094 E4	9113 F7
2754 C5	2829 A6	3112 E9	3225 D9	3580 A2	5202 E12	6203 D9	6609 E1	7770 C11	9013 C2	9037 G2	9074 C4	9095 D4	9114 E8
2756 B5	2830 A6	3120 F8	3229 E8	3581 A2	5204 D4	6306 B1	6611 A1	7800 B11	9014 G2	9038 G2	9075 C4	9096 D4	9115 C4
2757 B5	2831 A6	3121 F9	3233 E7	3613 A1	5501 C2	6307 C1	6617 D1	7810 A9	9015 G2	9039 F2	9076 C4	9097 C7	9116 D8
2758 B5	2833 A5	3201 D4	3234 D8	3624 B2	5502 C2	6314 D1	6619 A2	7820 A6	9016 B2	9040 F2	9077 C4	9098 B5	9117 A8
2761 C7	2834 A5	3204 F7	3236 D8	3626 C4	5760 B7	6315 F1	6770 C11	7821 A5	9017 F2	9042 D3	9078 E3	9099 F6	9118 F8
2762 B7	2835 B7	3206 F7	3236 E1	3627 C4	5761 A7	6406 B1	6802 A11	7830 B5	9021 C1	9045 D3	9079 E3	9100 F5	9120 D8



2 E6	7860 C8	9022 A2	9047 B3	9080 C8	9103 E7	9121 C8	9139 A10	9156 F12	9175 E3	AF16 A3
3 E7	9003 D2	9023 H2	9048 D3	9082 D4	9104 A7	9122 E8	9140 E10	9157 C5	9176 E3	AF17 D3
7 D11	9004 C2	9025 F2	9049 G3	9083 D4	9105 E7	9123 C8	9141 E10	9159 A5	9177 E3	AF18 C10
8 F3	9005 E1	9026 D3	9050 H3	9084 E3	9106 D6	9124 F9	9142 D10	9160 B11	9178 E2	
9 G2	9006 H2	9027 A2	9051 G3	9085 E3	9107 D6	9125 D9	9143 D10	9161 B7	9179 D2	
1 B2	9007 G2	9030 G2	9057 B3	9086 F3	9108 D8	9126 C9	9144 F10	9162 B12	9180 F3	
1 C3	9008 D1	9032 B2	9058 G3	9087 F4	9109 C7	9127 D9	9145 C10	9163 B12	9181 F3	
8 A1	9009 G1	9033 G1	9059 G3	9088 D4	9110 E7	9128 E9	9146 E11	9164 B12	9182 F3	
5 C5	9010 E1	9034 C3	9061 G3	9089 D4	9111 D8	9129 D9	9147 E11	9165 E4	9183 E3	
6 C6	9011 A1	9035 H2	9062 F3	9093 A4	9112 D7	9130 D9	9148 D11	9166 B10	9184 C3	
0 B8	9012 H2	9036 B2	9067 A4	9094 E4	9113 F7	9131 E9	9149 D11	9167 B10	9186 F2	
0 C11	9013 C1	9037 A2	9074 C4	9095 D4	9114 E8	9132 D9	9150 A11	9168 E7	9187 A12	
0 A9	9014 G2	9038 G2	9075 C4	9096 D4	9115 C4	9133 F9	9151 D12	9169 C5	AF11 D4	
0 A6	9015 G2	9039 F2	9076 C4	9097 C7	9116 D8	9134 E9	9152 D12	9170 G2	AF12 E12	
1 A5	9016 B2	9040 F2	9077 C4	9098 B5	9117 A8	9135 A10	9153 D12	9171 B12	AF13 D7	
0 B5	9017 F2	9042 D3	9078 E3	9099 F6	9118 F8	9136 D10	9154 A12	9172 E2	AF14 D12	
	9021 C1	9045 D3	9079 E3	9100 F5	9120 D8	9138 B10	9155 D12	9173 E2	AF15 C9	

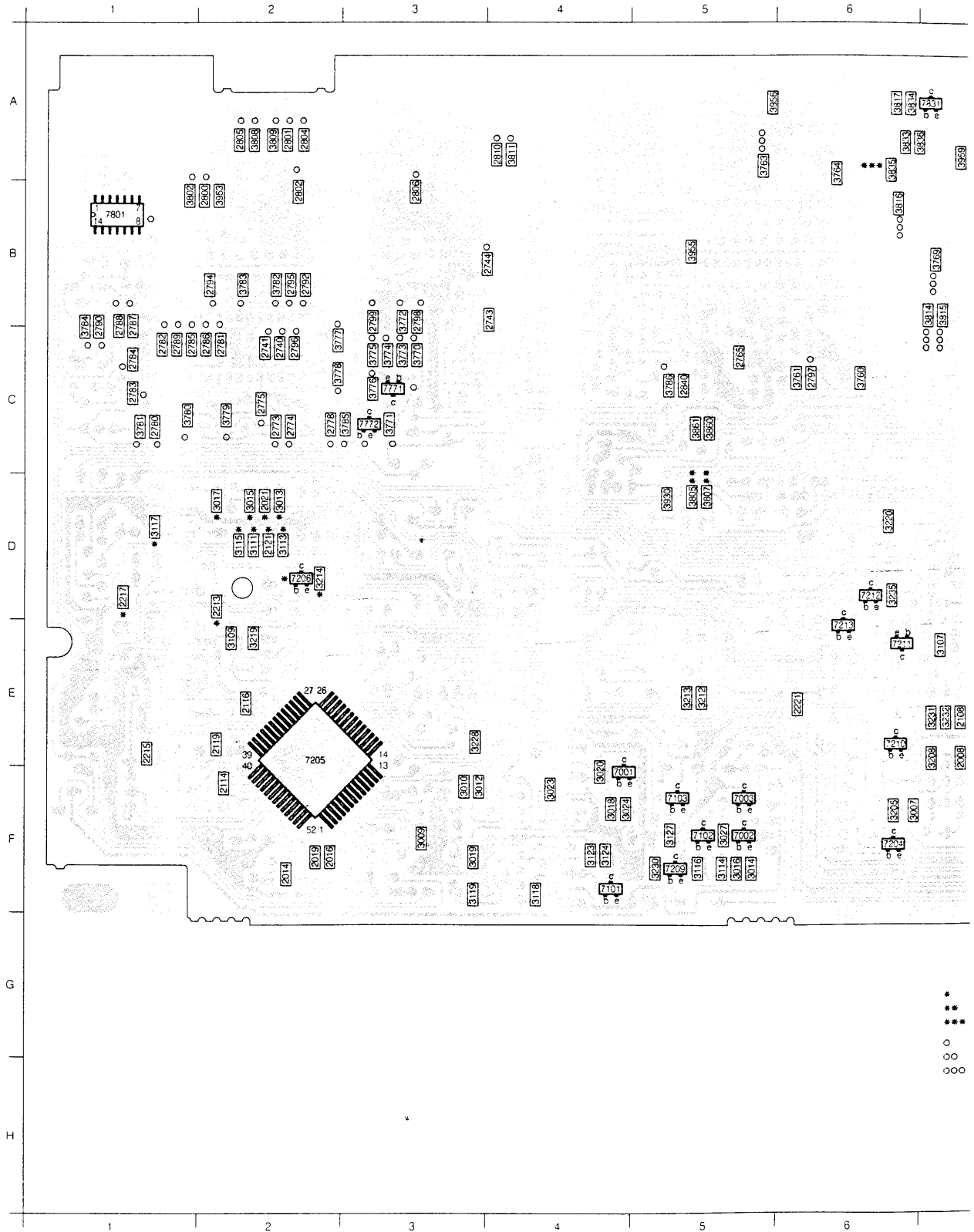


PCB 03092
T27/036

ONLY FOR LP
ONLY FOR GERMANSTEREO
ONLY FOR MULTISTEREO
ONLY FOR NICAM AND MULTISTEREO
ONLY FOR NICAM
ONLY FOR GERMANSTEREO AND MULTISTEREO

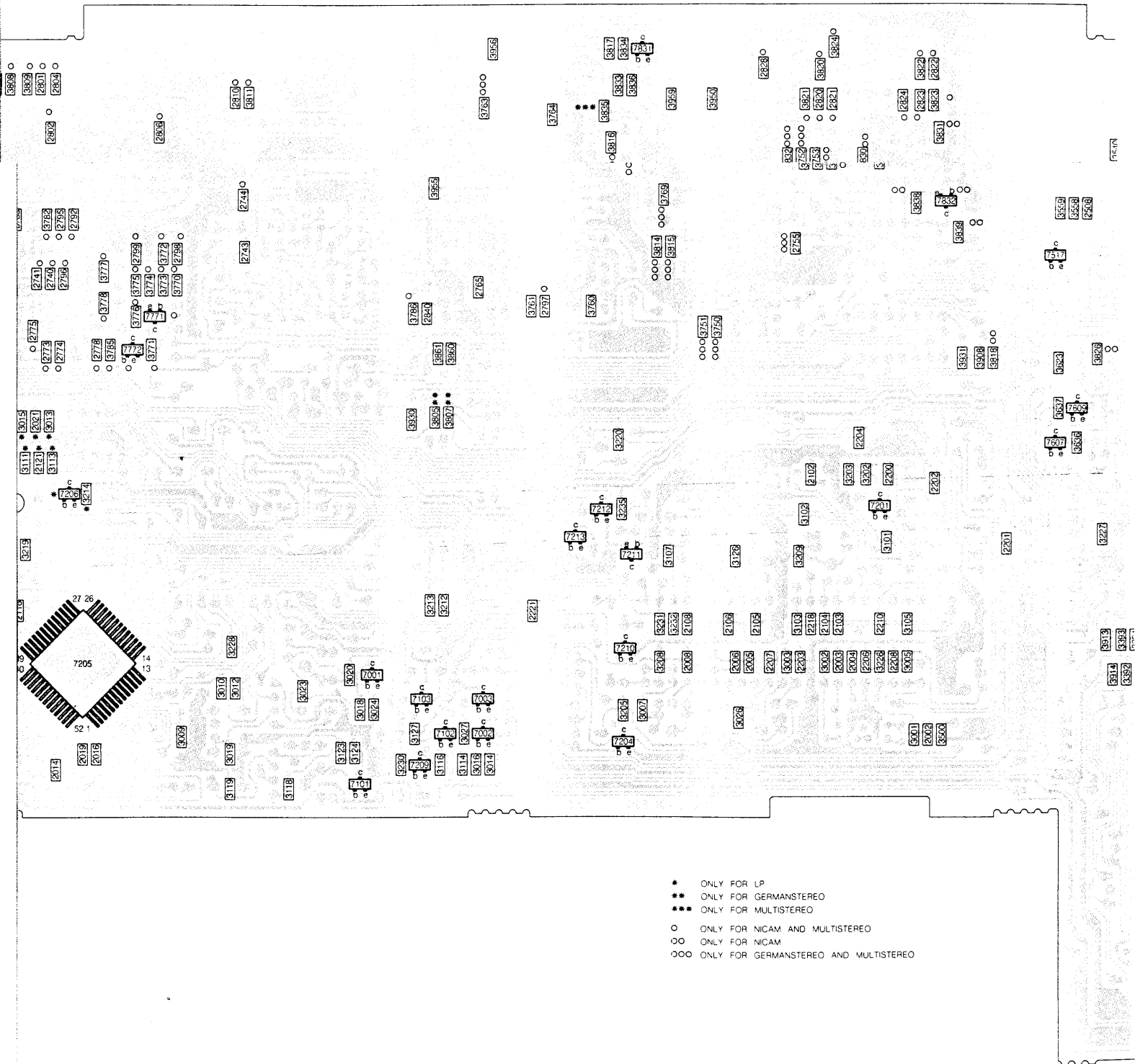
FM audio JAF

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2003 F8	2119 E2	2318 E12	2508 B10	2781 C2	2800 B2	3005 F8	3101 E8	3127 F5	3235 D6	3487 H12	356
2004 F8	2121 D2	2321 E12	2525 B11	2782 C1	2801 A2	3007 F6	3102 D8	3202 D8	3360 F11	3488 G12	357
2005 F7	2200 D8	2326 B12	2607 D11	2783 C1	2802 B2	3009 F3	3103 E8	3203 D8	3383 B11	3489 H12	357
2006 F7	2201 E9	2330 H12	2633 D10	2784 C1	2804 A2	3010 F3	3105 E8	3205 F6	3385 F11	3490 G12	361
2008 F7	2202 D9	2331 H12	2634 E10	2785 C1	2805 A2	3012 F3	3107 E7	3208 F7	3386 B11	3491 F11	361
2014 F2	2203 F8	2332 F10	2635 E11	2786 C2	2806 B3	3013 D2	3109 E2	3209 E8	3387 H11	3492 F11	362
2016 F2	2204 D8	2333 F10	2740 C2	2787 C1	2810 A4	3014 F5	3111 D2	3212 E5	3388 H12	3493 E11	362
2019 F2	2206 F8	2334 E10	2741 C2	2788 C1	2820 A8	3015 D2	3113 D2	3213 E5	3389 H12	3494 E11	363
2021 D2	2207 F7	2405 B12	2743 C4	2789 C1	2821 A8	3016 F5	3114 F5	3214 D2	3390 H12	3500 F9	363
2102 D8	2208 F8	2418 D12	2744 B4	2790 C1	2822 A9	3017 D2	3115 D2	3219 E2	3391 F10	3505 D12	363
2103 E8	2210 E8	2421 E12	2755 B8	2792 B2	2823 A9	3018 F4	3116 F5	3220 D6	3392 F10	3540 B10	367
2104 E8	2213 D2	2426 B12	2765 C5	2794 B2	2824 A9	3019 F4	3117 D1	3226 F8	3393 E10	3541 A11	369
2105 E7	2215 E1	2430 H12	2773 C2	2795 B2	2828 A8	3020 F4	3118 F4	3227 E10	3394 E10	3542 A11	375
2106 E7	2217 D1	2431 G12	2774 C2	2796 C2	2840 C5	3023 F4	3119 G4	3228 E3	3460 E11	3543 B11	375
2108 E7	2218 E8	2432 F11	2775 C2	2797 C6	3001 F8	3024 F4	3123 F4	3230 F5	3463 B11	3558 B10	375
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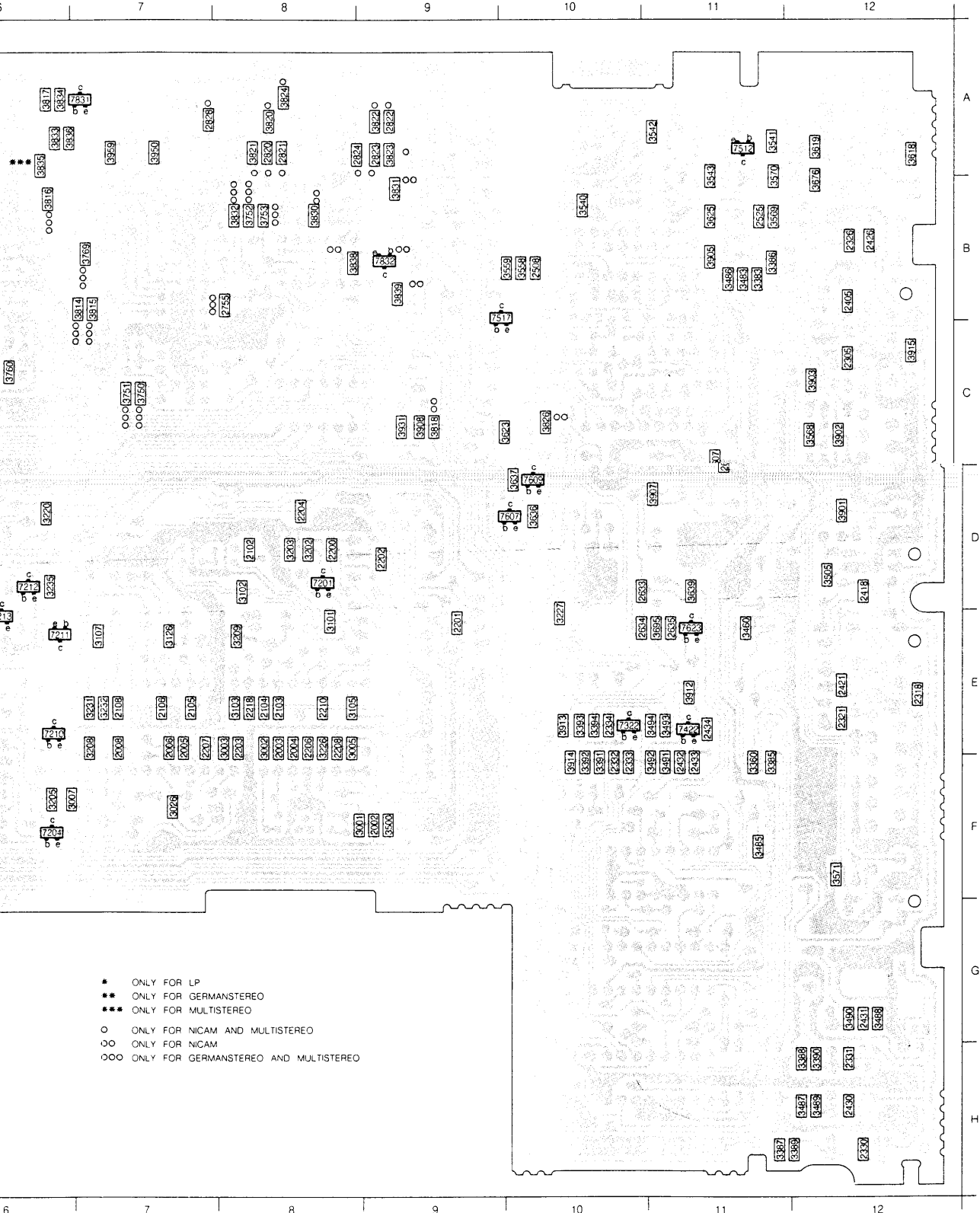
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2	2755 B8	2792 B2	2823 A9	3018 F4	3116 F5	3220 D6	3392 F10	3540 B10	3676 B12	3776 C3	3814 B7	3836 A7	3950 A7	7212 D6
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2	2774 C2	2796 C2	2840 C5	3023 F4	3119 G4	3228 E3	3460 E11	3543 B11	3751 C7	3779 C2	3817 A6	3860 C5	3956 A5	7322 E10
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1	2778 C2	2798 C3	3002 F8	3026 F7	3124 F4	3231 E7	3485 F11	3559 B10	3753 B8	3781 C1	3820 A8	3901 D12	7001 F4	7512 A11

2 3 4 5 6 7 8 9 10



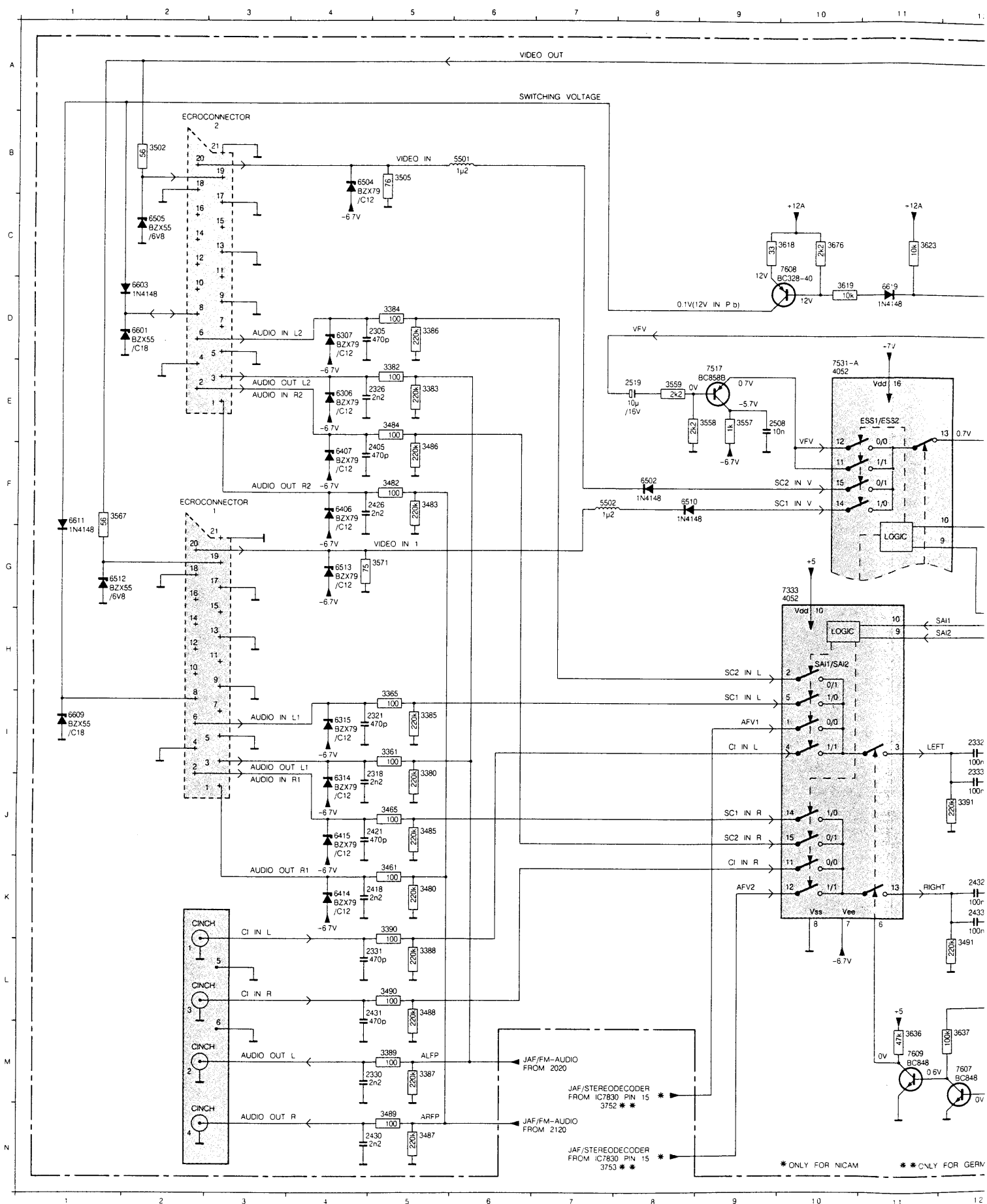
2 3 4 5 6 7 8 9 10

3486 B11	3568 C12	3760 C6	3782 B2	3821 A8	3902 C12	7002 F5	7517 C9
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3488 G12	3570 A12	3763 B6	3784 C10	3823 A9	3905 E11	7101 F4	7609 D10
3489 H12	3571 F12	3764 B6	3785 C3	3824 A8	3907 D11	7102 F5	7623 E11
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3491 F11	3619 A12	3770 C3	3802 B1	3830 B8	3912 E11	7201 D8	7772 C3
3492 F11	3623 C10	3771 C3	3805 D5	3831 B9	3913 E10	7204 F6	7801 B1
3493 E11	3625 B11	3772 C3	3807 D5	3832 B8	3914 F10	7205 E2	7831 A7
3494 E11	3636 D10	3773 C3	3808 A2	3833 A6	3915 C12	7206 D2	7832 B9
3500 F9	3637 D10	3774 C3	3809 A2	3834 A6	3930 D5	7209 F5	
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3540 B10	3676 B12	3776 C3	3814 B7	3836 A7	3950 A7	7211 E6	
3541 A11	3695 E11	3777 C3	3815 B7	3838 B9	3953 B2	7212 D6	
3542 A11	3750 C7	3778 C3	3816 B6	3839 B9	3955 B5	7213 E6	
3543 B11	3751 C7	3779 C2	3817 A6	3860 C5	3956 A5	7322 E10	
3558 B10	3752 B8	3780 C2	3818 C9	3861 C5	3959 A7	7422 E11	
3559 B10	3753 B8	3781 C1	3820 A8	3901 D12	7001 F4	7512 A11	



- * ONLY FOR LP
- ** ONLY FOR GERMANSTEREO
- *** ONLY FOR MULTISTEREO
- ONLY FOR NICAM AND MULTISTEREO
- ONLY FOR NICAM
- ONLY FOR GERMANSTEREO AND MULTISTEREO

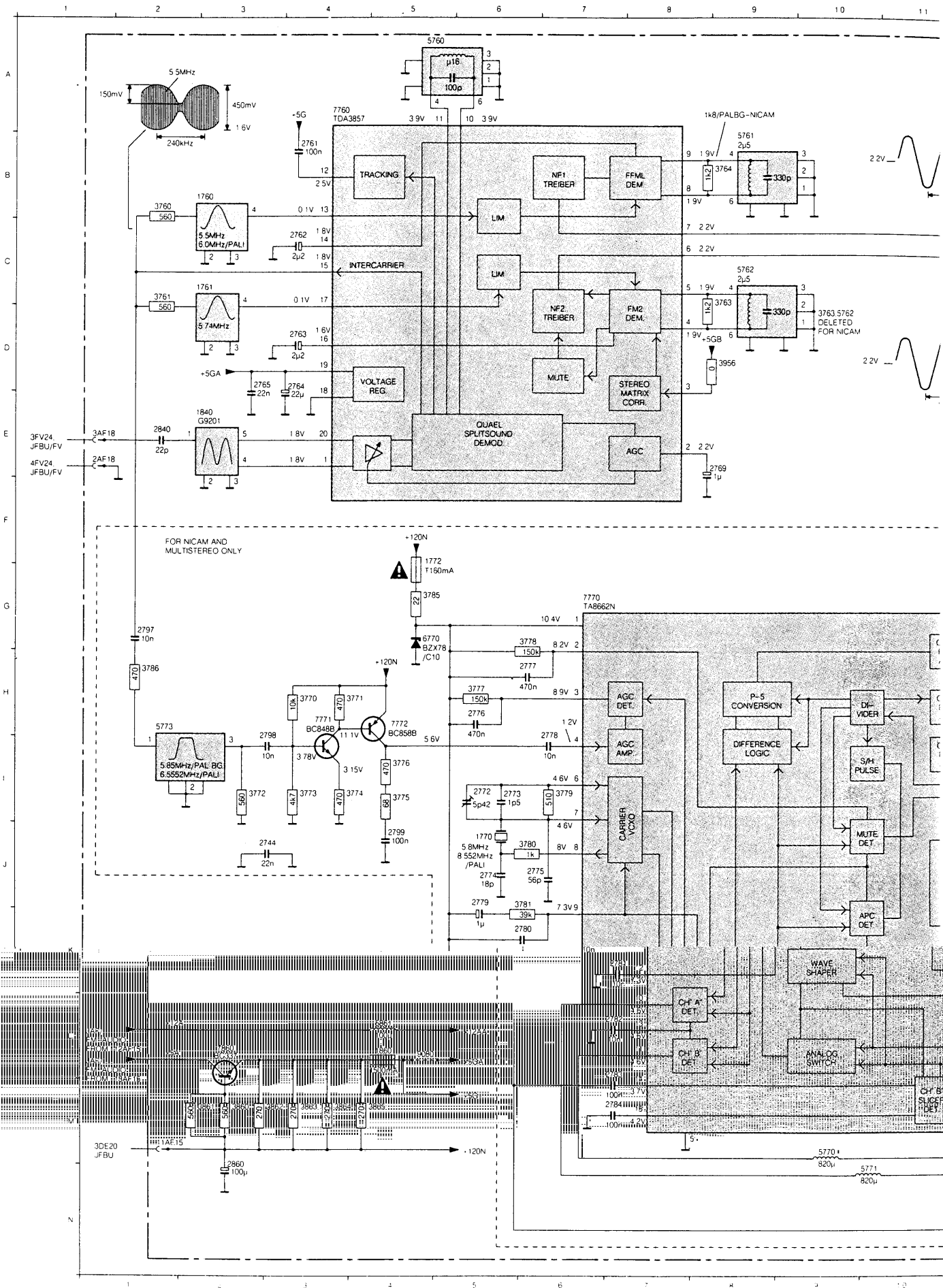
FM audio JAF I/O



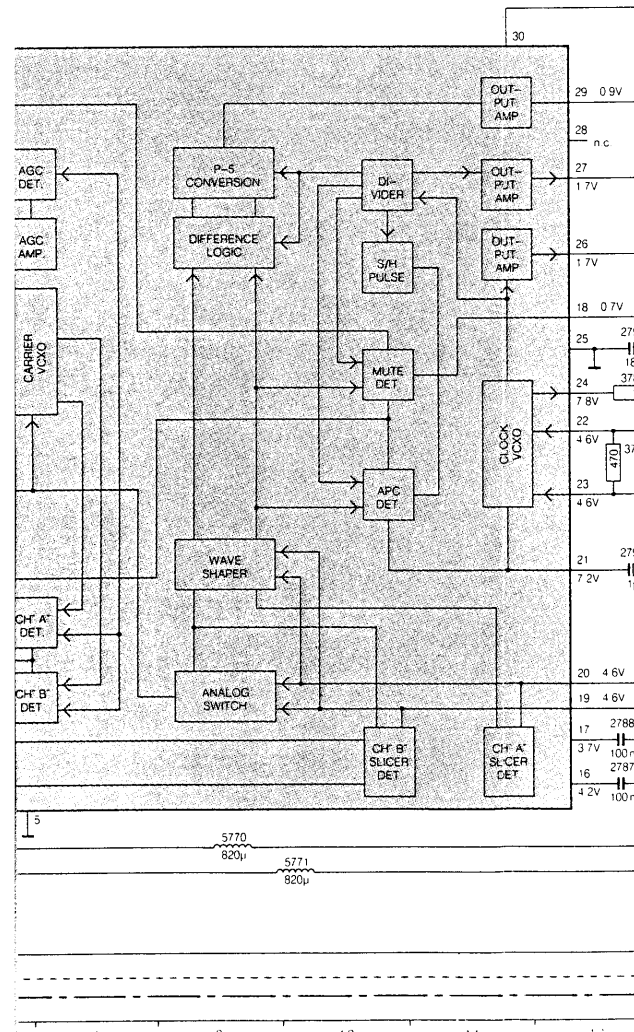
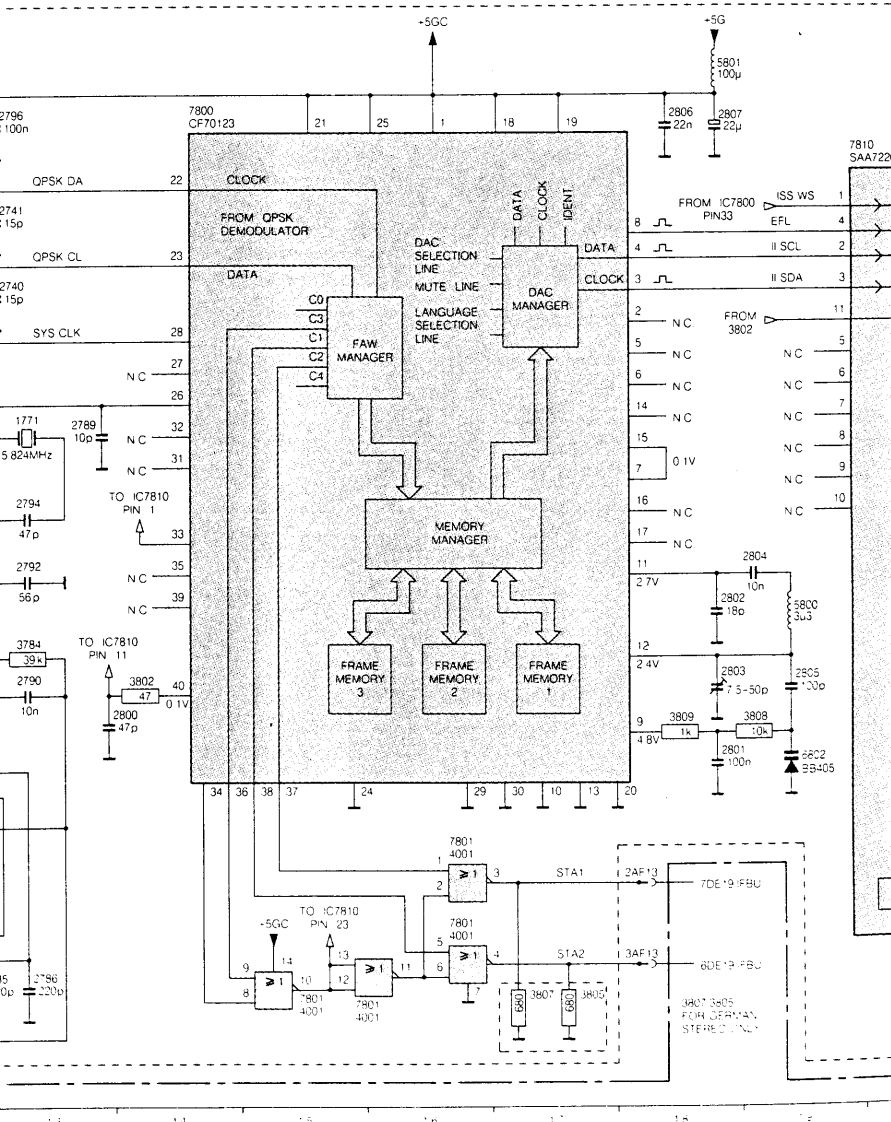
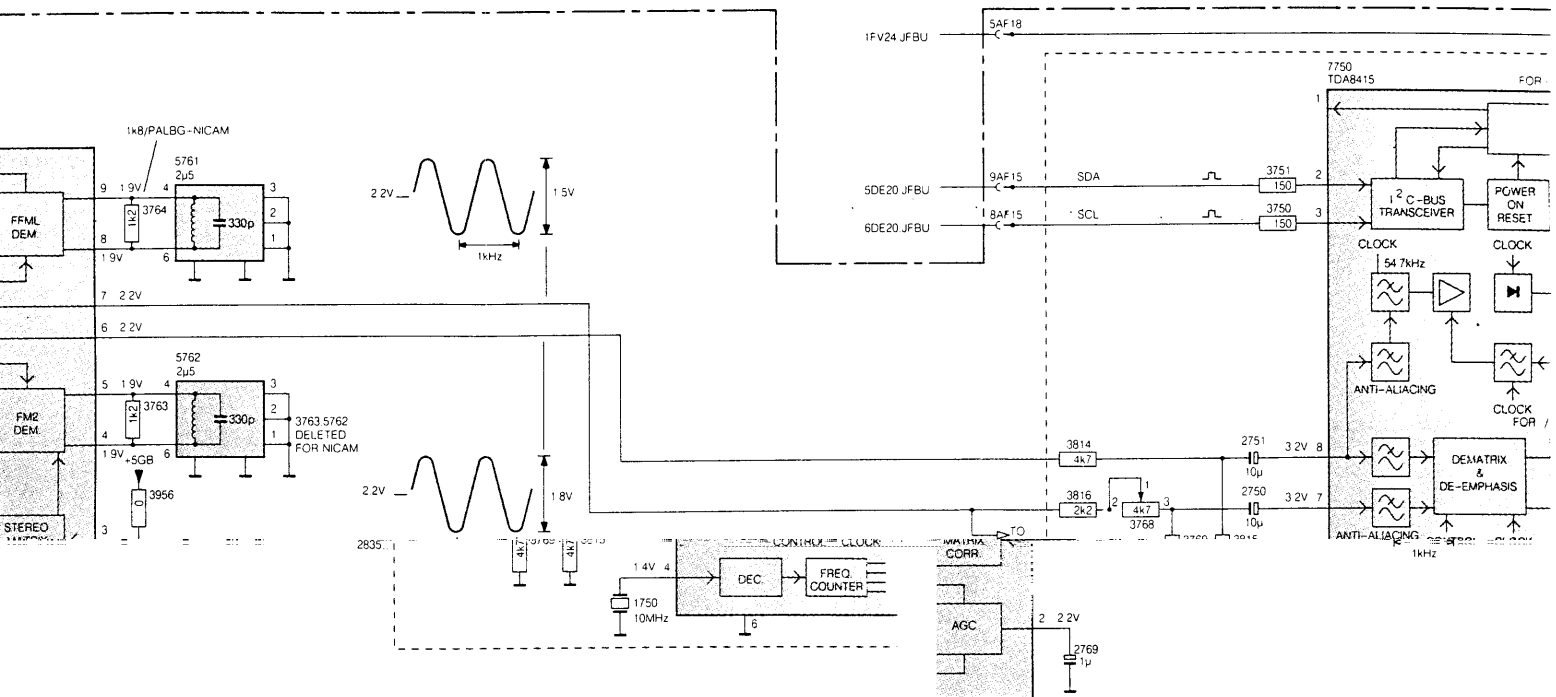


FM audio JAF/Stereodecoder

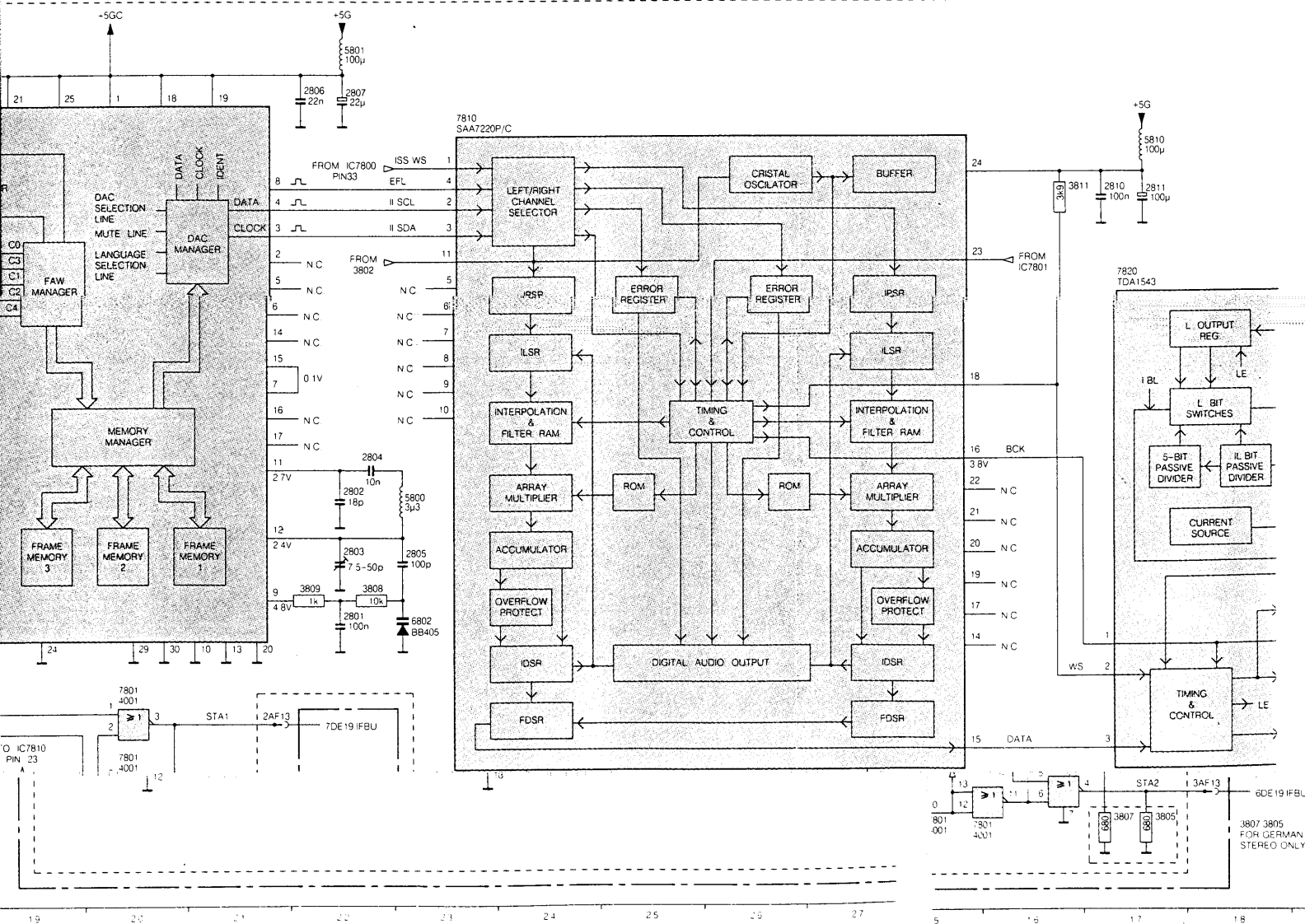
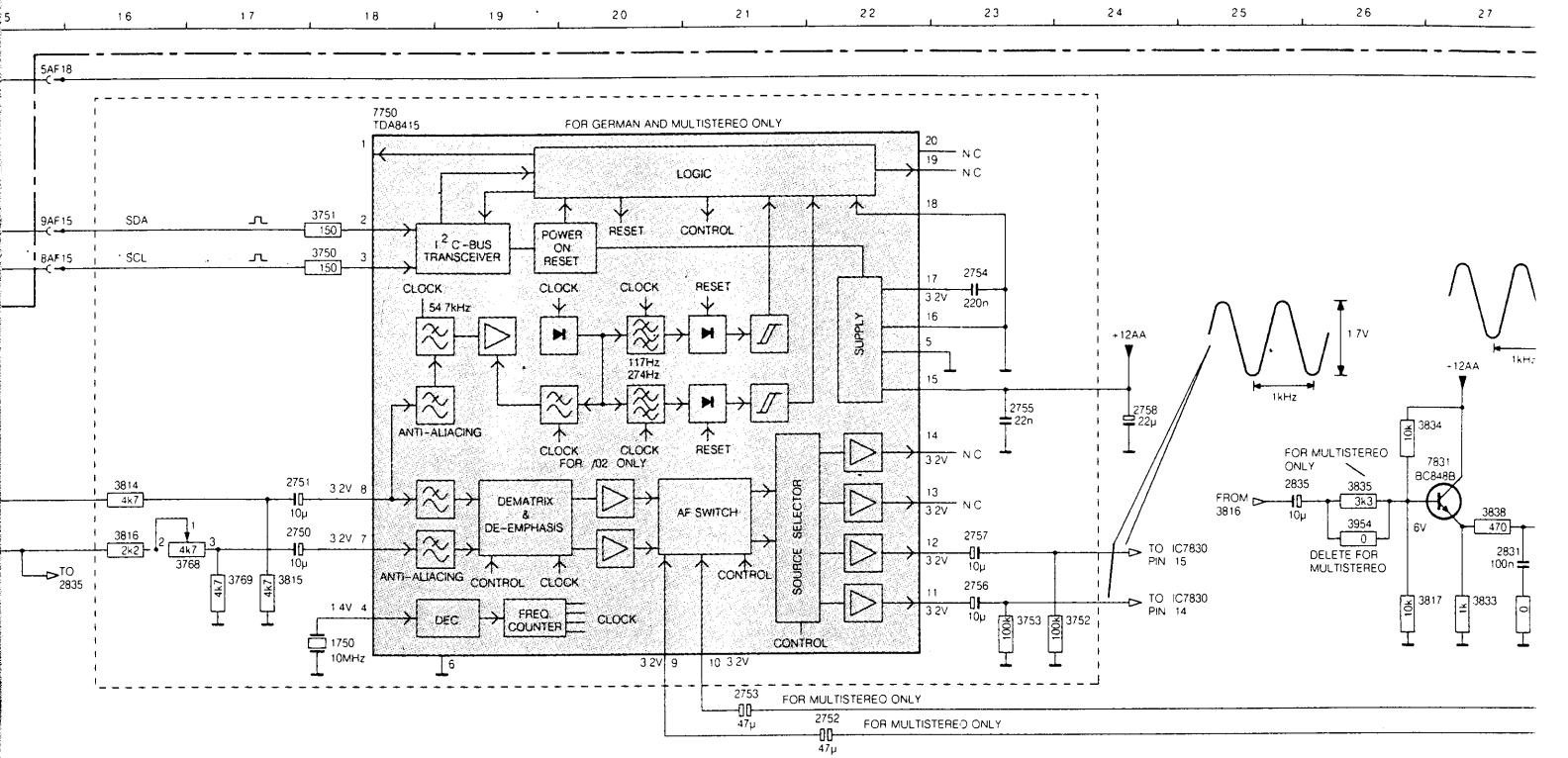
1750 E18	1772 G5	2744 J3	2754 B23	2761 B4	2769 E8	2776 H6	2781 K7	2786 N13	2791 K12	2797 G2	2802 K18	2807 G18
1760 B2	1840 E2	2750 D17	2755 C23	2762 C4	2772 I6	2777 H6	2784 M7	2787 M12	2792 K13	2798 I3	2803 K18	2810 H26
1761 C2	1860 L4	2751 D17	2756 E23	2763 D4	2773 I6	2778 I7	2782 L7	2788 L12	2794 J13	2799 J5	2804 J19	2811 H26
1770 J6	2740 H13	2752 F21	2757 D23	2764 D4	2774 J6	2779 J6	2783 L7	2789 I13	2795 I12	2800 L13	2805 K19	2820 I31
1771 I13	2741 H13	2753 F21	2758 C24	2765 D3	2775 J7	2780 K6	2785 N12	2790 K13	2796 G13	2801 L18	2806 G18	2821 J31



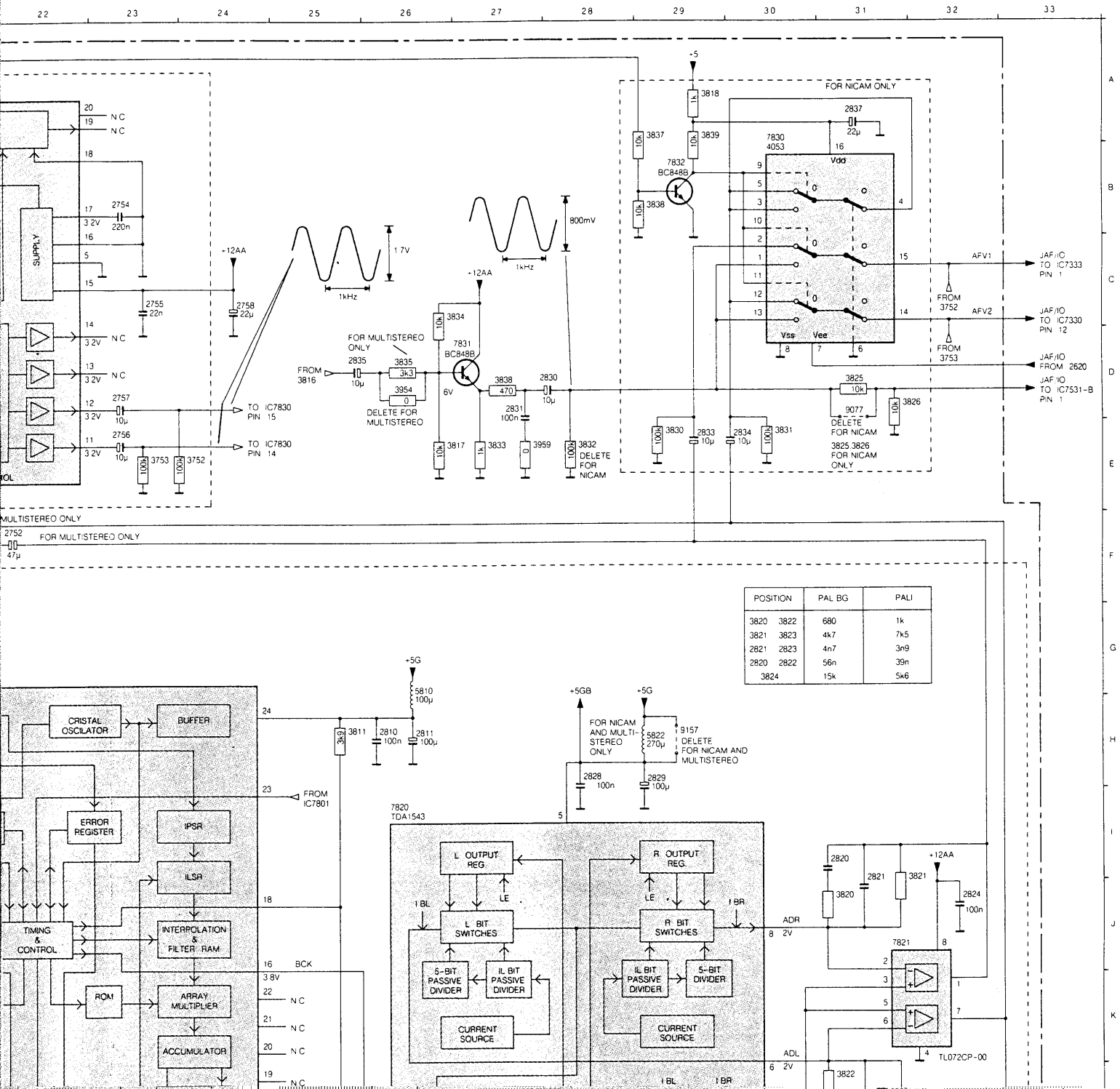
N13	2791 K12	2797 G2	2802 K18	2807 G18	2822 L31	2830 D28	2837 A31	3752 E24	3764 B9	3772 I3	3777 H6	3782 J12	3802 K14	3811 H25	38
M12	2792 K13	2798 I3	2803 K18	2810 H26	2823 L31	2831 D27	2840 E2	3753 E23	3768 D17	3773 I4	3778 G6	3783 J12	3805 N17	3814 D16	39
L12	2794 J13	2799 J5	2804 J19	2811 H26	2824 J32	2833 E29	2860 N2	3760 B2	3769 E17	3774 I4	3779 I7	3784 K13	3807 N17	3815 E17	40
I13	2795 I12	2800 L13	2805 K19	2820 I31	2828 H28	2834 E30	3750 B18	3761 C2	3770 H4	3775 I5	3780 J6	3785 G5	3808 L19	3816 D16	41
K13	2796 G13	2801 L18	2806 G18	2821 J31	2829 H29	2835 D25	3751 B18	3763 D9	3771 H4	3776 I5	3781 J6	3786 H2	3809 L18	3817 E26	42

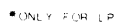


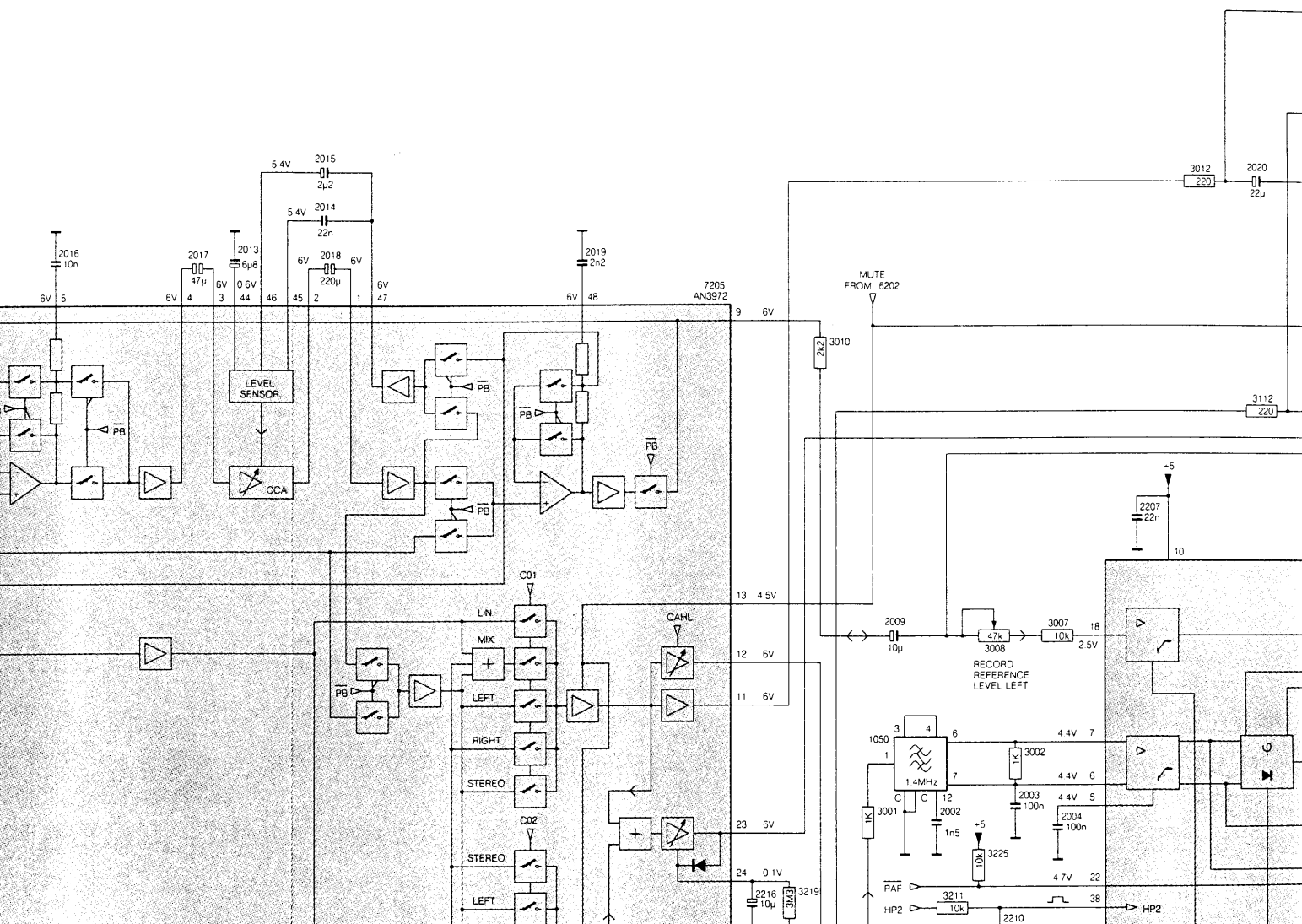
B9	3772	I3	3777	H6	3782	J12	3802	K14	3811	H25	3818	A29	3824	M30	3832	E28	3838	B29	3862	M3	3956	D9	5770	M9	5810	G26	7750	A18	78
D17	3773	I4	3778	G6	3783	J12	3805	N17	3814	D16	3820	J31	3825	D31	3833	E27	3838	D27	3863	M3	3959	E27	5771	N10	5822	H29	7760	A4	78
E17	3774	I4	3779	I7	3784	K13	3807	N17	3815	E17	3821	J31	3826	D31	3834	C26	3839	A29	3864	M3	5760	A5	5773	H2	5861	L4	7770	G7	78
H4	3775	I5	3780	J6	3785	G5	3808	L19	3816	D16	3822	L31	3830	E29	3835	D26	3860	M2	3865	M4	5761	B9	5800	K19	6770	G5	7771	H4	78
H4	3776	I5	3781	J6	3786	H2	3809	L18	3817	E26	3823	L31	3831	E30	3837	A29	3861	M2	3954	D26	5762	C9	5801	G18	6802	L19	7772	H5	78

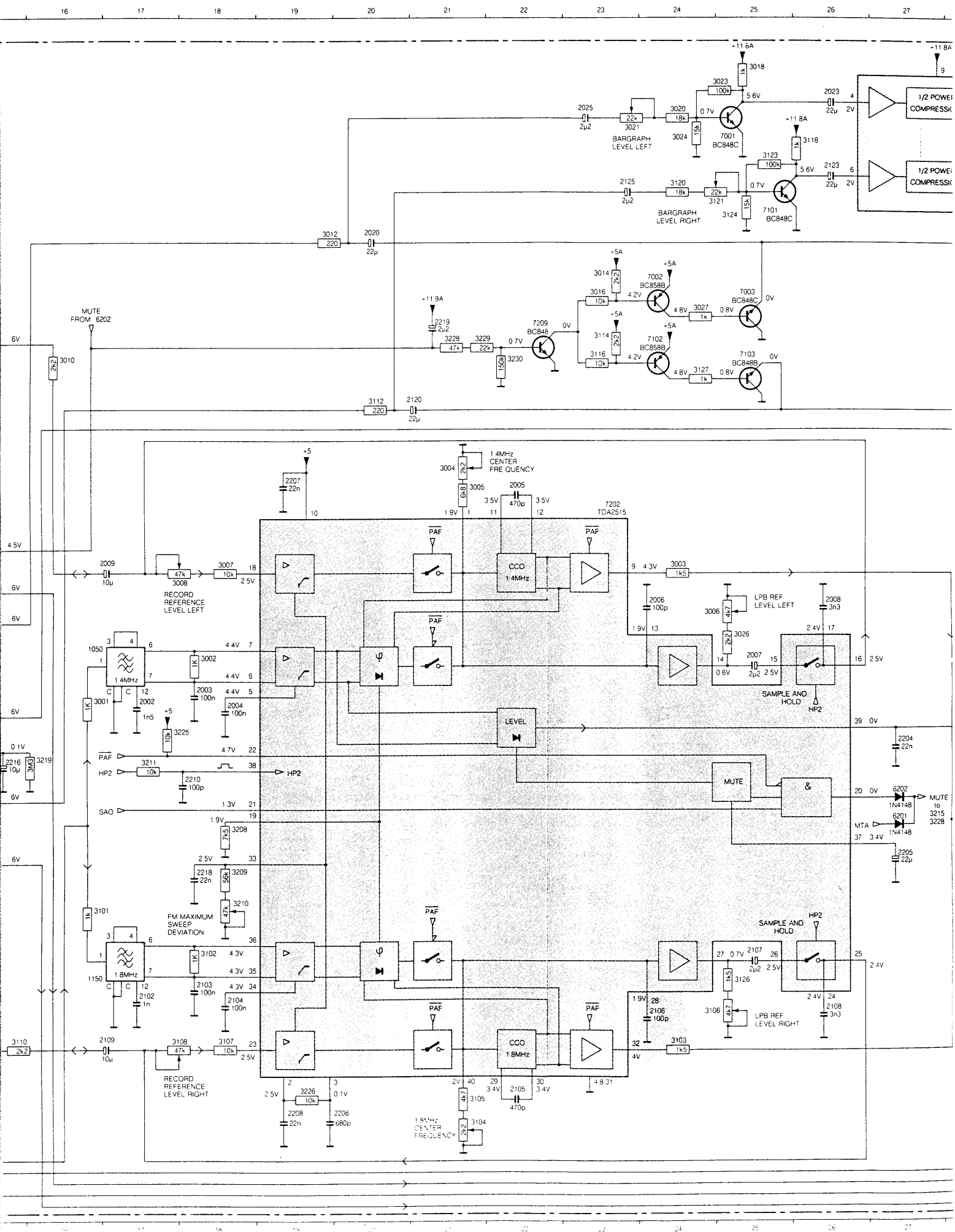


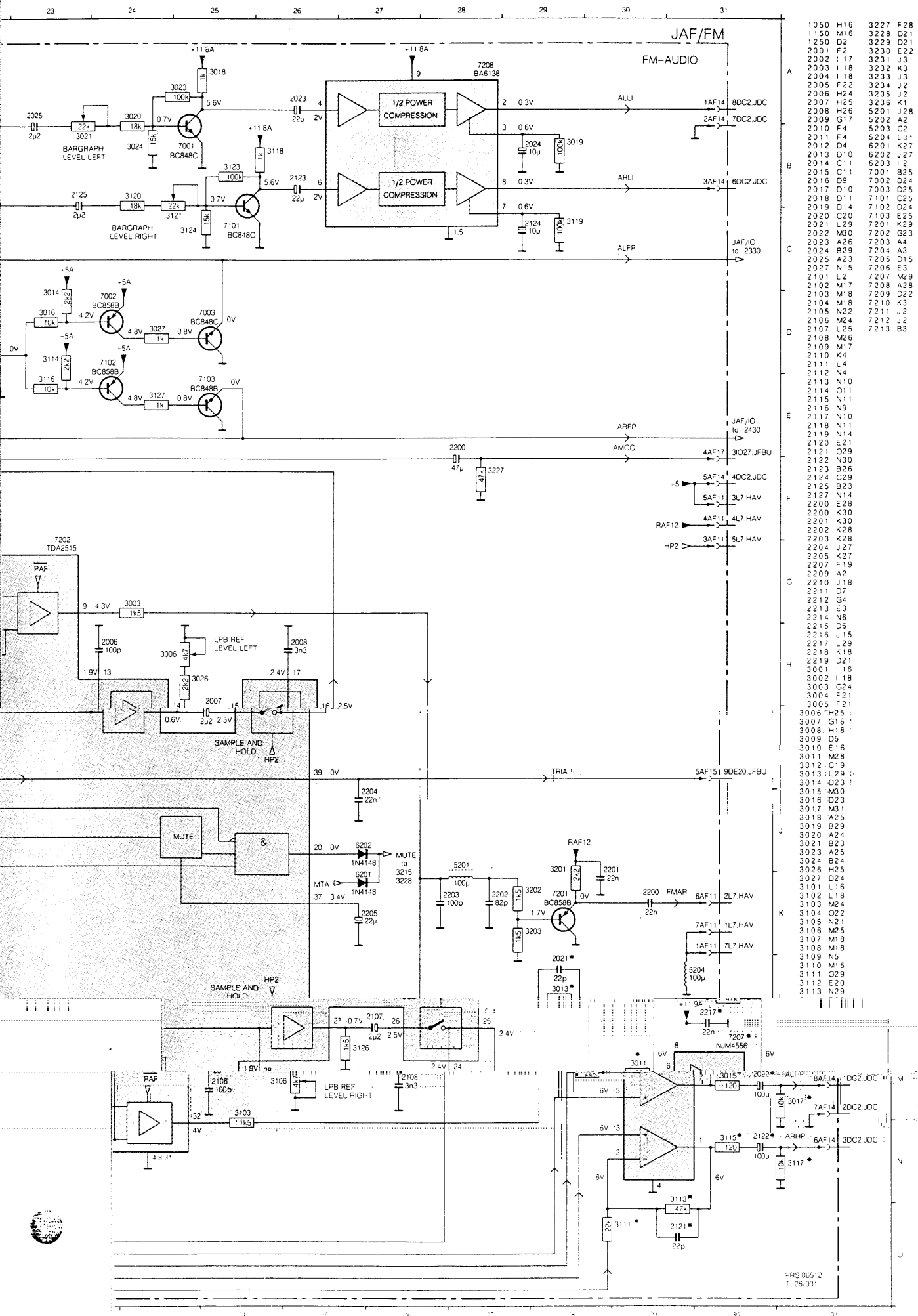
32	E28	3838	B29	3862	M3	3956	D9	5770	M9	5910	G26	7750	A18	7800	G14	7830	A30	9080	L4
33	E27	3838	D27	3863	M3	3959	E27	5771	N10	5822	H29	7760	A4	7801	N15	7831	D27	9157	H29
34	C26	3839	A29	3864	M4	3960	A5	5773	H2	5861	L4	7770	G7	7810	G19	7832	B29		
35	D26	3860	M2	3865	M4	3961	B9	5800	K19	5870	G5	7771	H4	7820	L26	7860	L2		
37	A29	3861	M2	3954	D26	5762	C9	5801	G18	6802	L19	7772	H5	7821	J32	9077	D31		











1050	H16	3227	F28
1150	M16	3228	D28
1250	D2	3229	D21
2001	F2	3230	E22
2002	I17	3231	J3
2003	I18	3232	K3
2004	I18	3233	J3
2005	F22	3234	J2
2006	H24	3235	J2
2007	H25	3236	K1
2008	H26	5201	J28
2009	G17	5202	A2
2010	F4	5203	C2
2011	F4	5204	L31
2012	D4	6201	K27
2013	D10	6202	J27
2014	C11	6203	J2
2015	C11	7001	B25
2016	D9	7002	D24
2017	D10	7003	D25
2018	D11	7101	C25
2019	D14	7102	D24
2020	C20	7103	E25
2021	L29	7201	K29
2022	M0	7202	G23
2023	A26	7203	A4
2024	B29	7204	A3
2025	A23	7205	D15
2027	N15	7206	E3
2101	L2	7207	M29
2102	M17	7208	A28
2103	M18	7209	D22
2104	M18	7210	K3
2105	N22	7211	J2
2106	M24	7212	J2
2107	L25	7213	B3
2108	M26		
2109	M17		
2110	K4		
2111	L4		
2112	N4		
2113	N10		
2114	O11		
2115	N11		
2116	N9		
2117	N10		
2118	N11		
2119	N14		
2120	E21		
2121	O29		
2122	N30		
2123	B26		
2124	C29		
2125	B23		
2127	N14		
2200	E28		
2200	K30		
2201	K30		
2202	K28		
2203	K28		
2204	J27		
2205	K27		
2207	F19		
2209	A2		
2210	J18		
2211	O7		
2212	G4		
2213	E3		
2214	N6		
2215	D6		
2216	J15		
2217	L29		
2218	K18		
2219	D21		
3001	I16		
3002	I18		
3003	G24		
3004	F21		
3005	F21		
3006	H25		
3007	G16		
3008	H18		
3009	D5		
3010	E18		
3011	M28		
3012	C19		
3013	L29		
3014	D23		
3015	M30		
3016	D23		
3017	M31		
3018	A25		
3019	B29		
3020	A24		
3021	B23		
3023	A25		
3024	B24		
3026	H25		
3027	D24		
3101	L16		
3102	L18		
3103	M24		
3104	O22		
3105	N21		
3106	M25		
3107	M18		
3108	M18		
3109	N5		
3110	M15		
3111	O29		
3112	E20		
3113	N29		

3114	D23
3115	N30
3116	E23
3117	N31
3118	B26
3119	C29
3120	B24
3121	C25
3122	A25

3124	C25
3126	M25
3127	E24
3201	K29
3202	K29
3203	K29
3205	A4
3207	B2
3208	K18
3209	K18
3210	L18
3211	J17
3212	2
3213	2
3214	E3
3215	E2
3216	H3
3217	G3
3218	D2
3219	J16
3221	G3
3222	A3
3223	H2
3224	H2
3225	I17
3226	N19

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Settings of the JAF FM audio section

The settings of Items 3 and 4 are set to an exact value in the works and must ONLY be changed if important components of the FM modulator, among them the modem ICs 2515, have been replaced.

1. Setting of the bar graph drive

Measurement preparation:

- Bring the unit into the AUDIO mode; the two recording level controls in mid-position (click position)
- Apply a signal of 1 kHz (500 mV_{eff}) to the CINCH connector

1.1 Setting of the recording level for the left channel (3021)

- Make a recording by means of the OTR key
- Adjust the indication of the fluorescence meter to 0 dB for the left channel with 3021

1.2 Setting of the recording level for the right channel (3121)

- Make a recording by means of the OTR key
- Adjust the indication of the fluorescence meter to 0 dB for the right channel with 3121

2. Setting the carrier frequency

2.1 Setting the 1.4 MHz carrier frequency (3004)

- Connect a capacitor of 220 nF between pin 32 of IC7202 and the chassis
- Connect a frequency meter to emitter 7201
- Set the recording controls at the front panel to minimum and switch the recorder to the recording mode
- Regulate the frequency to 1.4 MHz $\pm$ 5 kHz with 3004
- Disconnect the capacitor between pin 32 of IC 7202 and chassis

2.2 Setting of the 1.8 MHz carrier frequency (3104)

- Connect a capacitor of 220 nF between pin 9 of IC7202 and chassis
- Connect a frequency meter to the emitter of 7201
- Set the recording controls at the front panel to minimum and switch the recorder to the recording mode
- Regulate the frequency to 1.8 MHz $\pm$ 5 kHz with 3104
- Disconnect the capacitor between pin 9 of IC7202 and chassis

3. Setting of the maximum FM swing

Measurement preparation:

- Bring the modulation controls into the mechanical mid-position
- Turn controls for the nominal FM swing (3210) completely to the left (maximum amplitude)
- Make a recording of an input signal of 1.5 V_{eff} (measured at pin 6 for the left and pin 31 of IC7205 for the right) and 10 kHz

3.1 Setting the maximum FM swing for 1,4 MHz (3210)

- Connect a capacitor of 220 nF between connection 32 of IC7202 and the chassis
- Connect an oscilloscope to emitter 7201

- Switch the recorder to the recording mode
- Trigger the oscilloscope to the correct position (Fig. 1)
- Increase the fifth period T (Fig. 2) with the "DELAYED TIME BASE" and measure the deviation
- The time T should be equal to 0,63 μ s $\pm$ 0,15 μ s; this corresponds to an FM swing of approx. 150 kHz
- Remove the capacitor between pin 32 of IC7202 and the chassis
- Now adjust the nominal FM swing according to 4.1

3.2 Control of the maximum FM swing for 1,8 MHz

- Connect a capacitor of 220 nF between connection 32 of IC7202 and the chassis
- Connect an oscilloscope to emitter 7201
- Switch the recorder to the recording mode
- Trigger the oscilloscope to the correct position (Fig. 1)
- Increase the fifth period T (Fig. 2) with the "DELAYED TIME BASE" and measure the deviation
- The time T should be equal to 0,46 μ s $\pm$ 0,09 μ s; this corresponds to an FM swing of approx. 150 kHz
- Remove the capacitor between pin 9 of IC7202 and the chassis
- Now adjust the nominal FM swing according to 4.2

4. Setting the nominal FM swing

Measurement preparation:

- Bring the modulation controls into the mechanical mid-position
- Make a recording of an input signal of 249 mV_{eff} (measured at pin 6 for the left and pin 31 of IC7205 for the right) and 1 kHz

4.1 Setting of the nominal FM swing for 1,4 MHz (3008)

- Connect a capacitor of 220 nF between pin 32 of IC7202 and chassis
- Connect an oscilloscope to emitter 7201
- Switch the recorder to the recording mode
- Trigger the oscilloscope to the correct position (Fig. 1)
- Increase the fifth period (Fig. 2) with the "DELAYED TIME BASE" and measure the deviation
- Regulate the time T with 3008 so that it is equal to 0.25 μ s $\pm$ 0,06 μ s; this corresponds to an FM swing of approx. 56 kHz
- Remove the capacitor between connection 32 of IC7202 and the chassis

4.2 Setting the nominal FM swing for 1.8 MHz (3108)

- Connect a capacitor of 220 nF between connection 9 of IC7202 and chassis
- Connect an oscilloscope to emitter 7201
- Switch the recorder to the recording mode
- Trigger the oscilloscope to the correct position (Fig. 1)
- Increase the fifth period T (Fig. 2) with the "DELAYED TIME BASE" and measure the deviation
- Regulate the time T with 3108 so that it is equal to 0.17 μ s $\pm$ 0,03 μ s; this corresponds to an FM swing of approx. 56 kHz
- Remove the capacitor between connection 9 of IC7202 and the chassis

5. Setting the demodulator (amplitude reproduction)

Before the demodulator is regulated, one should be convinced that the adjustments of the FM swing are correct. If

this is not the case, they must first be set in accordance with Items 3 and 4.

Measurement preparation:

- Bring the modulation controls (recording level controls) into the mechanical mid-position
- Make a recording of an input signal of $250 \text{ mV}_{\text{eff}}$ (measured at pin 6 for the left and pin 31 of IC7205 for the right) and 1 kHz

5.1 Setting of the 1,4 MHz demodulator (3006)

- Connect a millivoltmeter to emitter 7003
- Reproduce the recording made above
- Regulate the voltage to $250 \text{ mV}_{\text{eff}} \pm 10 \text{ mV}$ with 3006

5.2 Setting of the 1,8 MHz demodulator (3106)

- Connect a millivoltmeter to emitter 7103
- Reproduce the recording made above
- Regulate the voltage to $250 \text{ mV}_{\text{eff}} \pm 10 \text{ mV}$ with 3106

Setting of the JAF/stereodecoder

1. Alignment to minimal interferences through the video-IF (5760)

- Connect a pattern generator via the aerial jack and feed an unmodulated stereo signal
- Connect a two-beam oscilloscope to pin 6 and 7 of IC 7760
- align to minimal interferences with 5760

2. Alignment of the 5.5 MHz FM demodulator (5761)

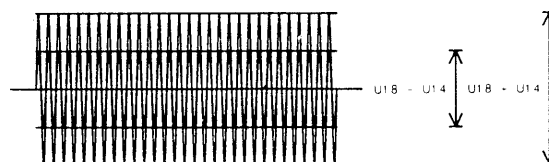
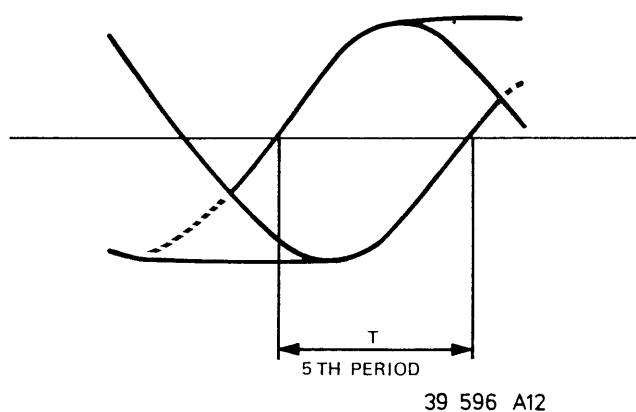
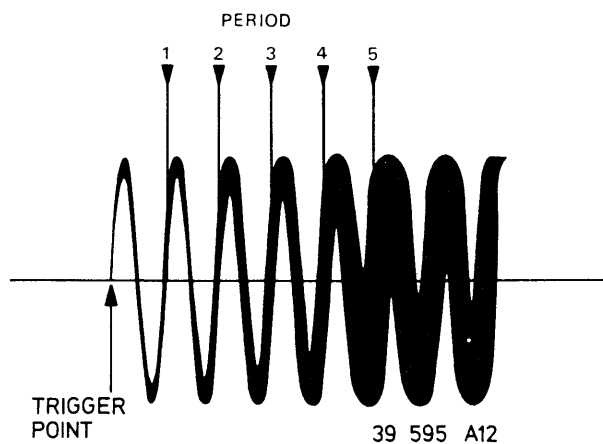
- Connect a pattern generator via the aerial jack and feed a stereo signal modulated on both sides (1 kHz)
- Connect an oscilloscope to pin 7 of IC 7760
- Align to maximum amplitude with 5761

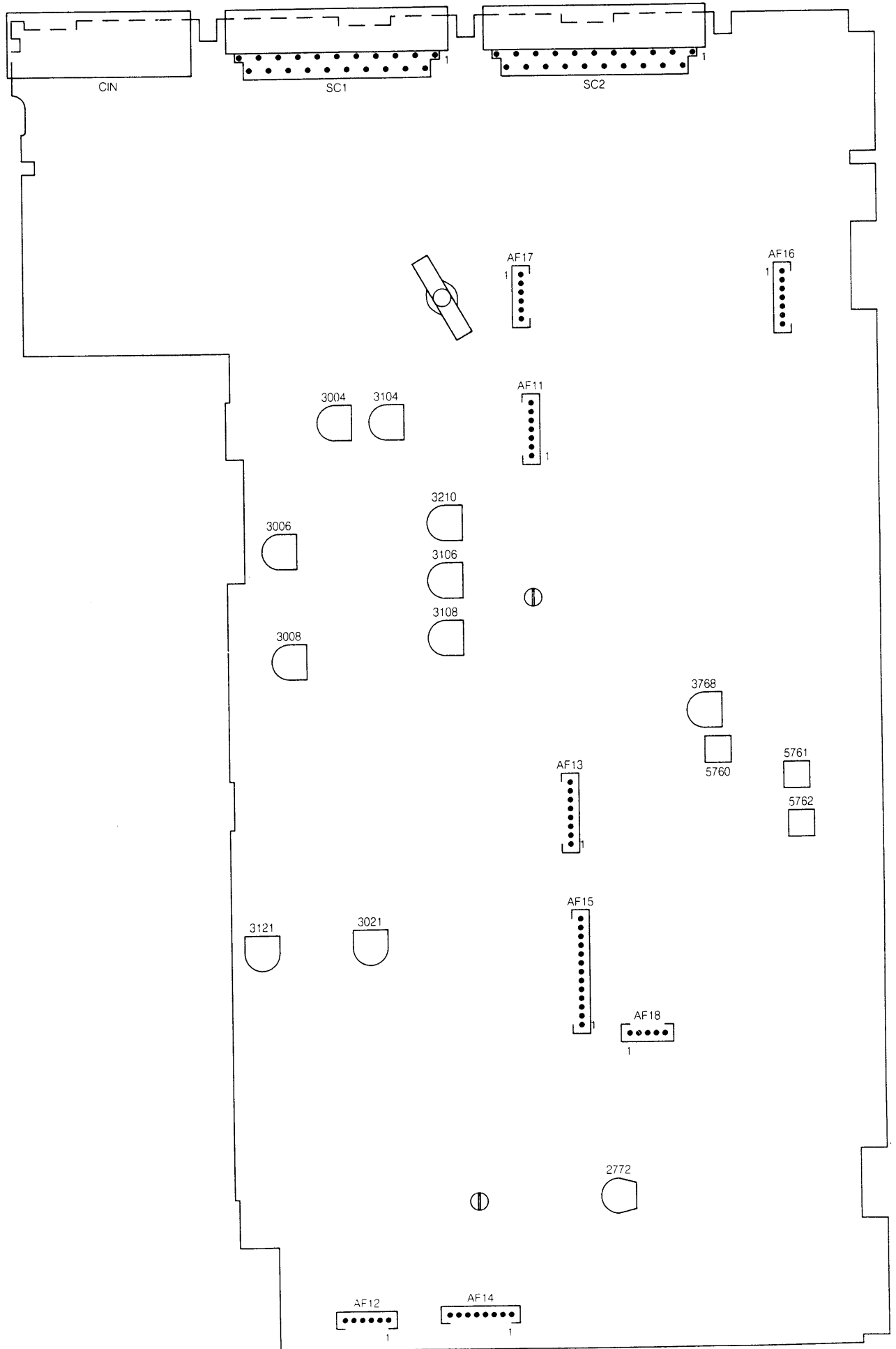
3. Alignment of the 5.74 MHz FM demodulator (5762)

- Connect a pattern generator as described in Item 2
- Connect an oscilloscope to pin 6 of IC 7760
- Align to maximum amplitude with 5762

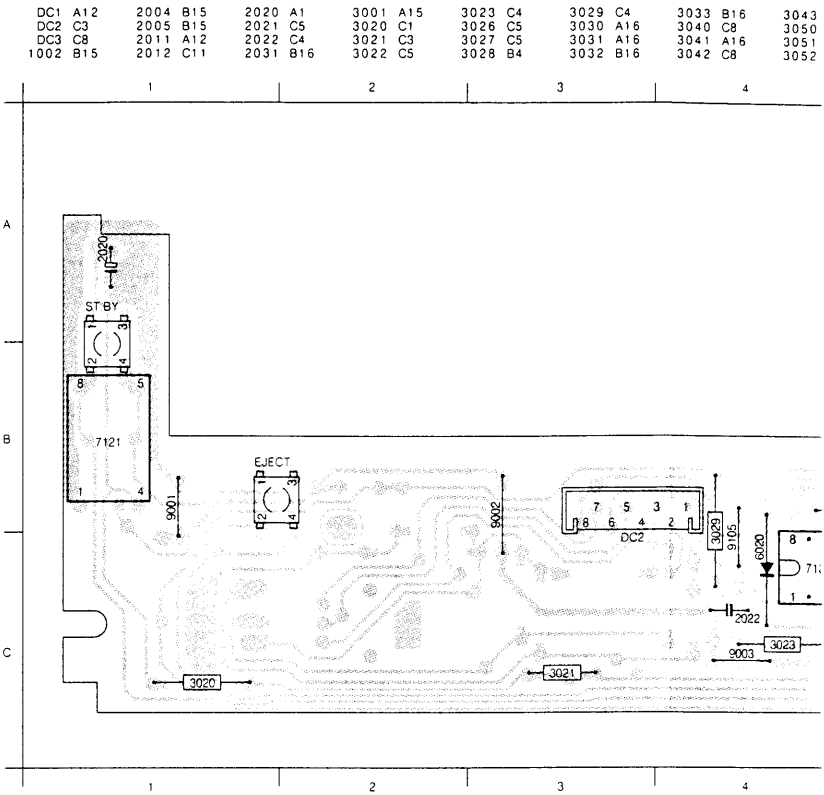
4. Alignment of the output voltage (3768)

- Connect a pattern generator as described in Item 2
- Connect a two-beam oscilloscope to pin 11 and pin 12 of IC 7750
- Set both signals to the same amplitude with 3768





Operating panel JDC5



Einstellungen auf JDC

Afregeling

Aussteuerung der Fluoreszenzmesser (3090 R, 3092 L)

1. Uitsturing

- Signal von 500 mV_{eff} 1 kHz zuführen an Cinch Buchse.
- Recorder in Position "PAUSE, AUDIO EXTERN (E1)".
- Schiebepotentiometer 3068-2A (L) und 3068-2B (R) in die mechanische Mitte.
- 3090 (R) und 3092 (L) so einstellen, daß die Aussteuerung am Fluoreszenzmesser 0 dB anzeigt.

- Sluit een pluggen.
- Recorde
- Plaats sc mechan
- Regel 30 bargraph

Adjustment on JDC

Ajustages

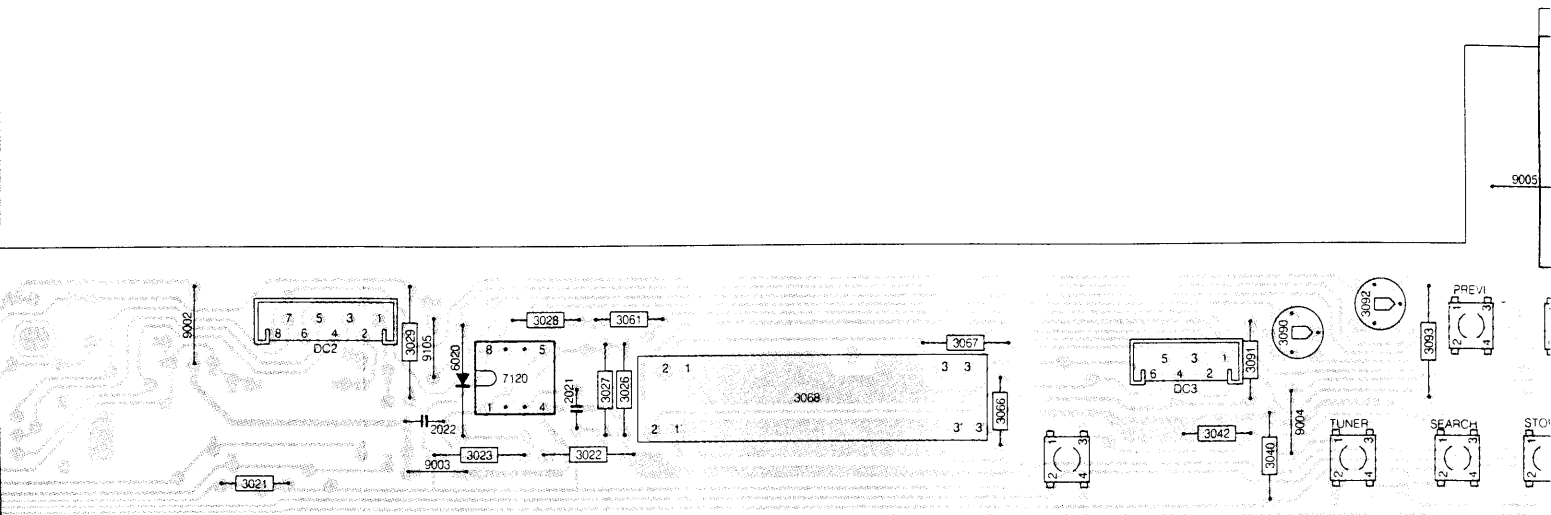
Adjustment of the deflection of the bargraph (3090 R, 3092 L)

1. Saturati (3090 droit

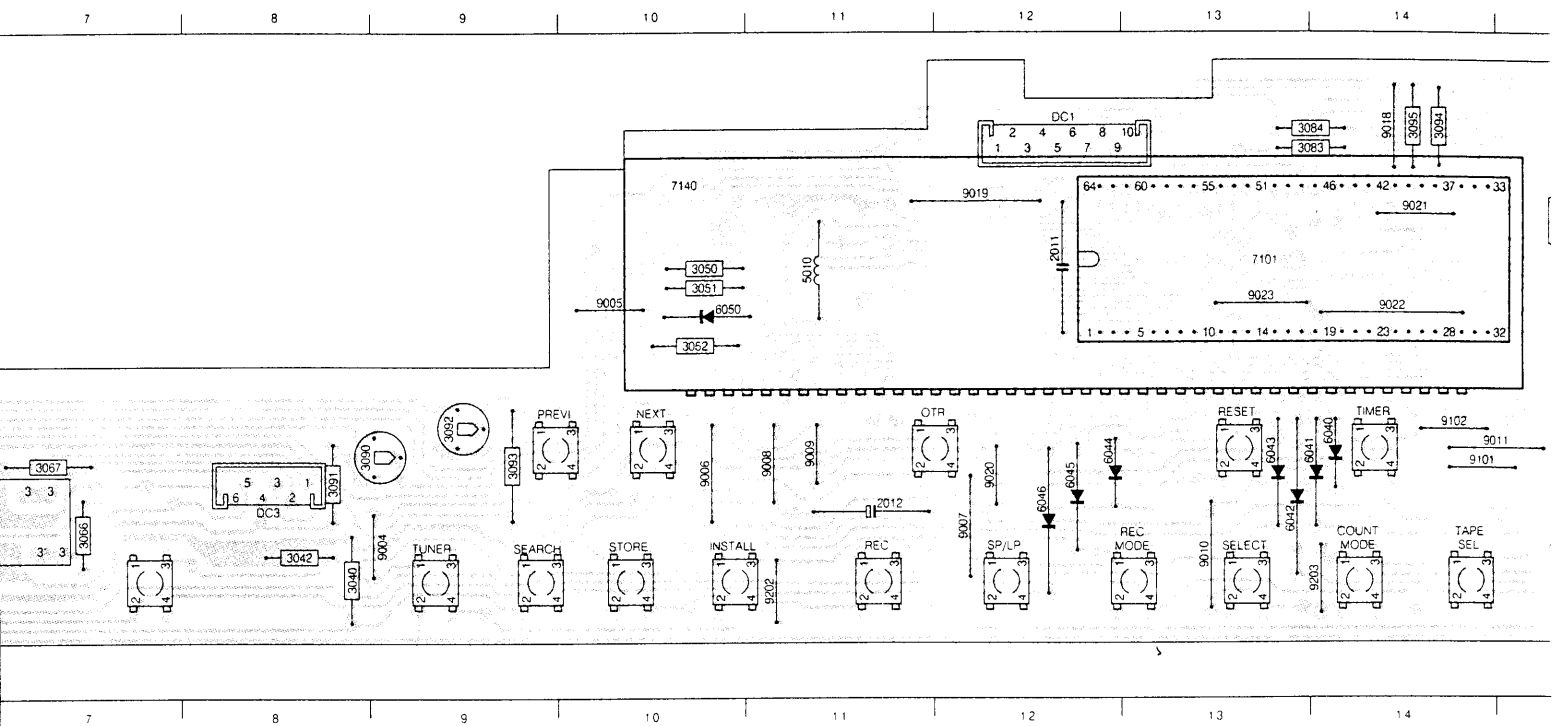
- Apply a 500 mV_{rms} 1 kHz signal to the cinch connector.
- Recorder in position "PAUSE, AUDIO EXTERN (E1)".
- Slide potentiometers 3068-2A (L) and 3068-2B (R) in the mechanical middle position.
- Adjust 3090 (R) and 3092 (L) so, that the deflection of the bargraph is 0 dB.

- Applique prises ci
- Mettre l'
- Mettre le et 3068-
- Ajuster S déviation 0 dB.

3001 A15	3023 C4	3029 C4	3033 B16	3043 A15	3061 B5	3083 A13	3090 C8	3094 A14	6040 B14	6044 C12	7030 A16	7140 A10	9004 C9
3020 C1	3026 C5	3030 A16	3040 C8	3050 B10	3066 C7	3084 A13	3091 C8	3095 A14	6041 C14	6045 C12	7101 A13	9001 B1	9005 B10
3021 C3	3027 C5	3031 A16	3041 A16	3051 B10	3067 C7	3085 A15	3092 B9	5010 B11	6042 C13	6046 C12	7120 C4	9002 B3	9006 C10
3022 C5	3028 B4	3032 B16	3042 C8	3052 B10	3068 C6	3086 A15	3093 C9	6020 C4	6043 C13	6050 B10	7121 B1	9003 C4	9007 C12
2	3	4	5	6	7	8	9						



094	A14	6040	B14	6044	C12	7030	A16	7140	A10	9004	C9	9008	C11	9012	B15	9018	A14	9022	B14	9105	C4	9205	B15
095	A14	6041	C14	6045	C12	7101	A13	9001	B1	9005	B10	9009	C11	9013	A15	9019	A12	9023	B13	9202	C11	9206	C15
010	B11	6042	C13	6046	C12	7120	C4	9002	B3	9006	C10	9010	C13	9014	A15	9020	C12	9101	C14	9203	A14	9204	B15
020	C4	6043	C13	6050	B10	7121	B1	9003	C4	9007	C12	9011	B14	9015	A15	9021	A14	9102	B14				



Ajustes en JDC

1. Modulación de los fluorímetros (3090 R, 3092 L)

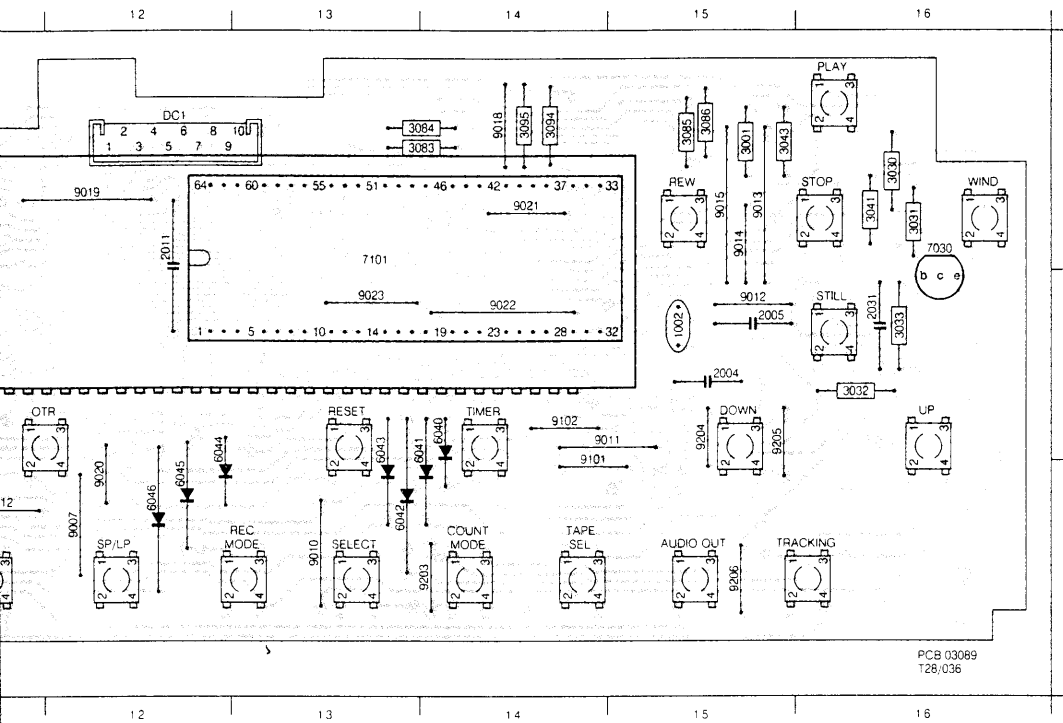
- Aplique una señal de 500 mV_{eff} 1 kHz al clavijero cinch.
- Ponga el aparato en posición "PAUSE, AUDIO EXTERN (E1)".
- Empuje el potenciómetro 3068-2A (L) y 3068-2B (R) al centro mecánico.
- Ajuste 3090 (R) y 3092 (L) de manera que el fluorímetro indique 0 dB.

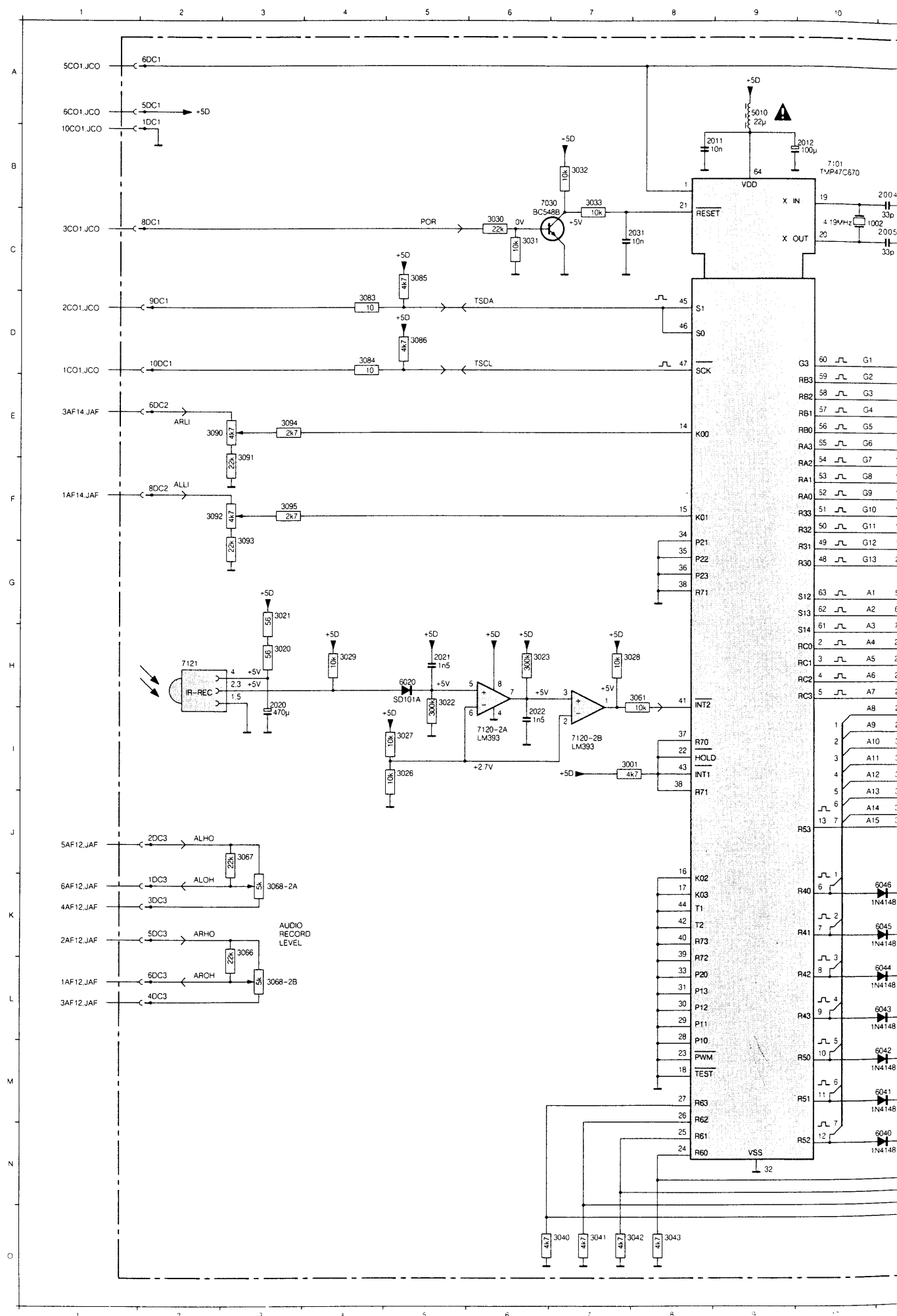
Regolazioni al JDC

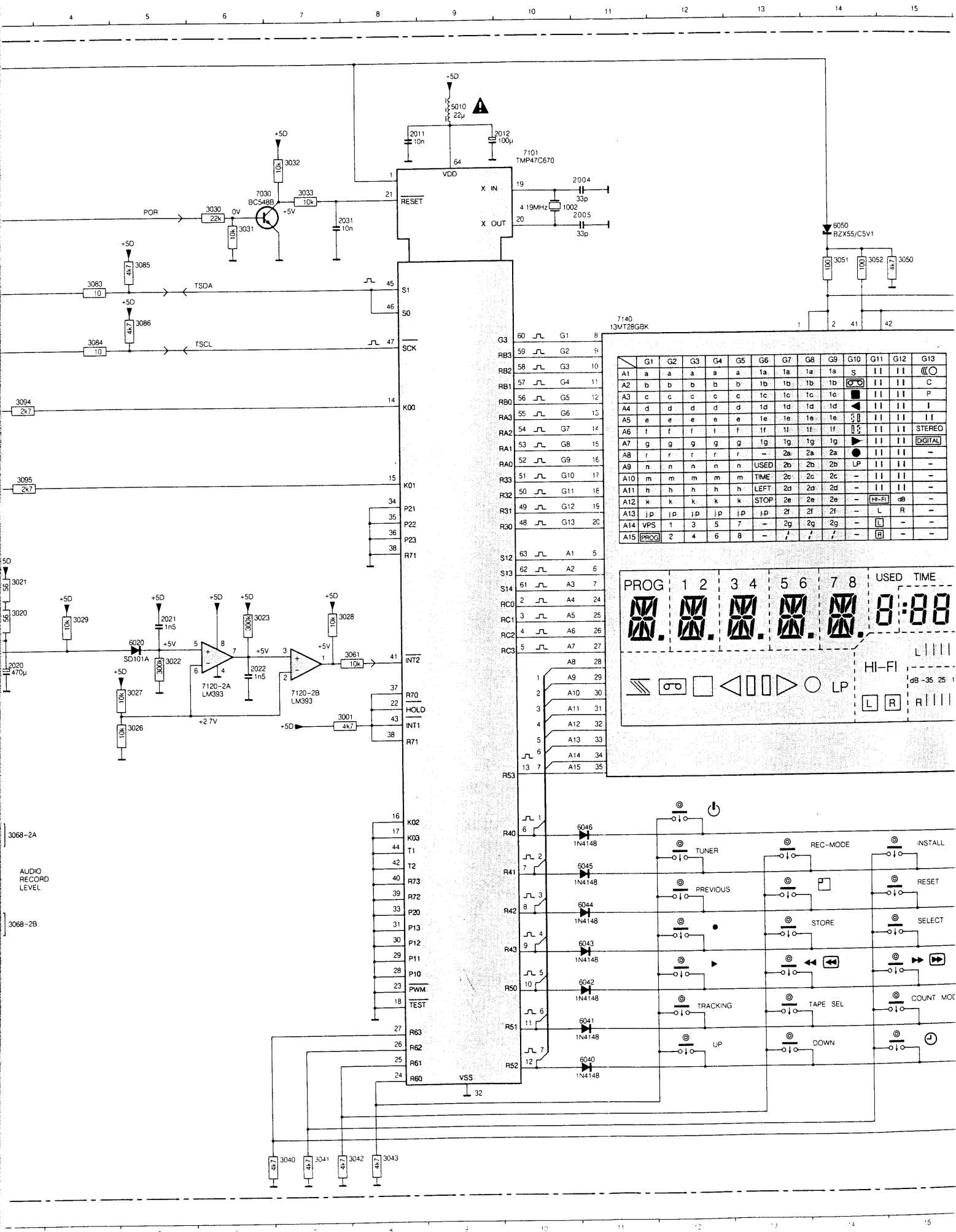
1. Modulazione dei misuratori della fluorescenza (3090 R, 3092 L)

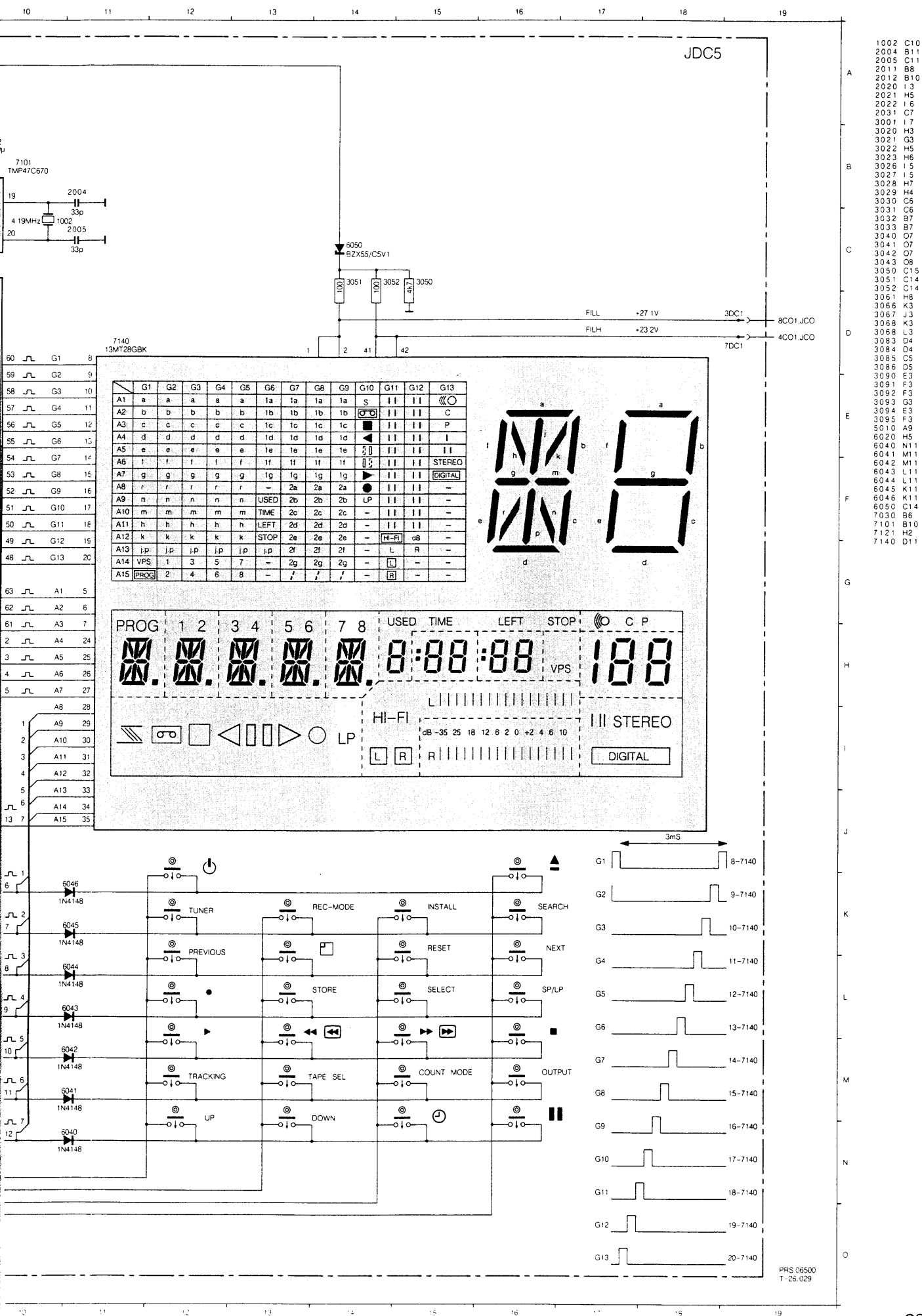
- Applicare un segnale di 500 mV_{eff} 1 kHz alla presa cinch.
- Portare l'apparecchio in posizione "PAUSE, AUDIO EXTERN (E1)".
- Spingere il potenziometro 3068-2A (L) e 3068-2B (R) al centro meccanico.
- Regolare 3090 (R) e 3092(L) in modo che la modulazione sul misuratore della fluorescenza indichi 0 dB.

9 A14	9022 B14	9105 C4	9205 B15
9 A12	9023 B13	9202 C11	9206 C15
9 C12	9101 C14	9203 C14	
1 A14	9102 B14	9204 B15	









Ajus

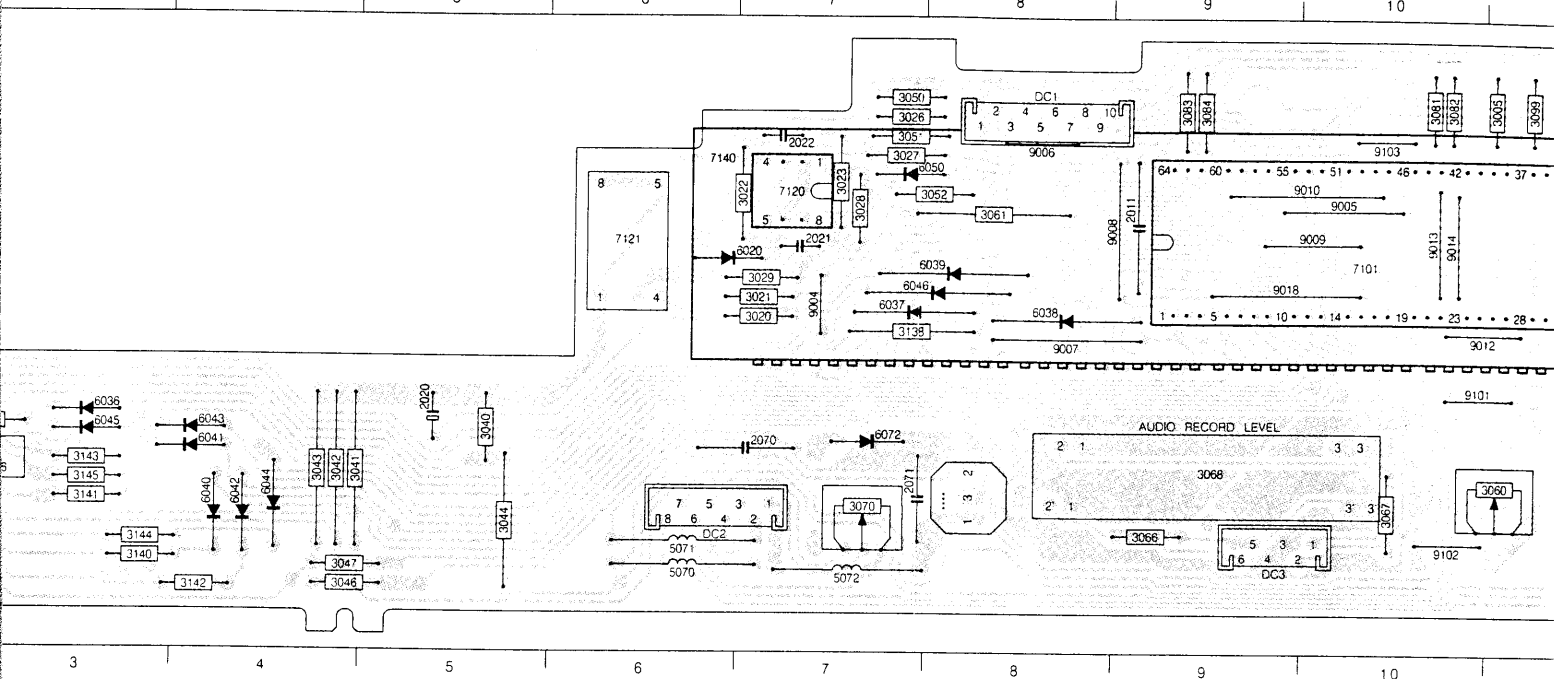
1. M

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Reg

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0 R, 3092 L)

Cinch Buchse.
INTERN (E1)".
068-2B (R) in

- Sluit een audio signaal 500 mV_{eff} 1 kHz aan op de cinch pluggen.
- Recorder in positie "PAUSE, AUDIO EXTERN (E1)".
- Plaats schuifpotmeters 3068-2A (L) en 3068-2B (R) in de mechanische middenstand.
- Regel 3090 (R) en 3092 (L) zodanig af dat uitslag op het bargraph display 0 dB is.

ch connector.
ERN (E1)".
8-2B (R) in the
deflection of

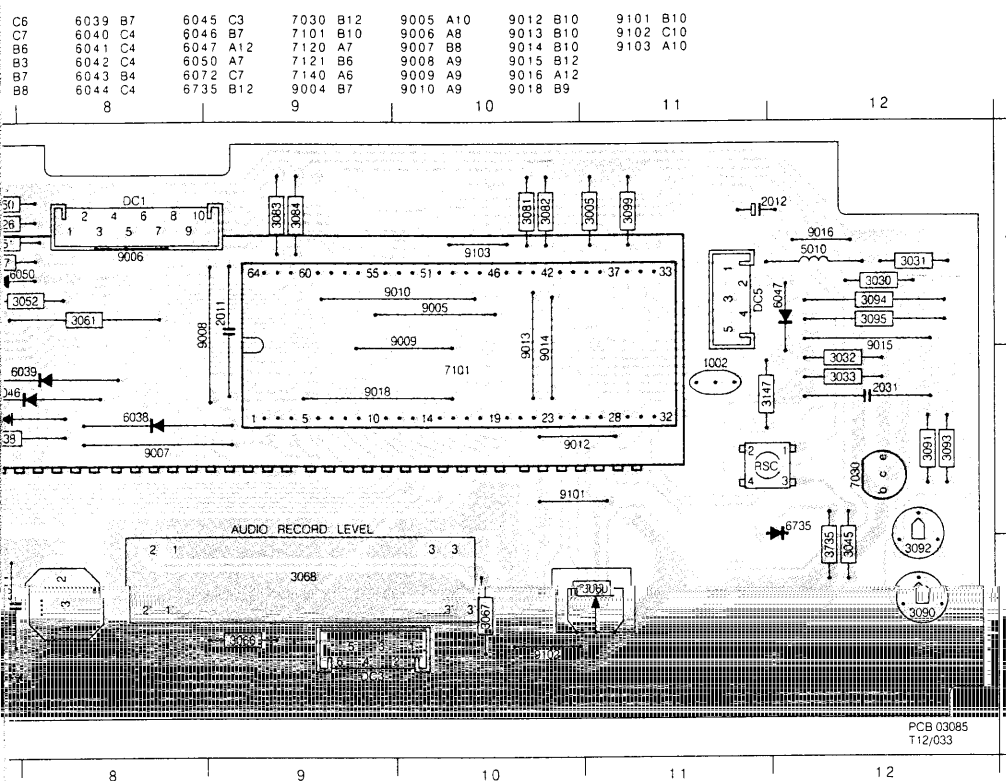
1. Saturation de l'affichage du diagramme à barres (3090 droite, 3092 gauche)
- Appliquer un signal audio de 500 mV_{eff} 1 kHz sur les prises cinch.
- Mettre l'appareil sur "PAUSE, AUDIO EXTERN (E1)"
- Mettre les potentiomètres à coulisse 3068-1A (gauche) et 3068-2B (droite) en position médiane.
- Ajuster 3090 (droite) et 3092 (gauche) pour que la déviation du diagramme à barres à l'afficheur soit de 0 dB.

1. Modulaci3n de los fluor3metros (3090 R, 3092 L)

- Aplique una señal de 500 mV_{eff} 1 kHz al clavijero cinco
- Ponga el aparato en posición "PAUSE, AUDIO EXTE (E1)".
- Empuje el potenciómetro 3068-2A (L) y 3068-2B (R) al centro mecánico.
- Ajuste 3090 (R) y 3092 (L) de manera que el fluorímetro indique 0 dB.

1. Modulazione dei misuratori della fluorescenza (3090 R, 3092 L)

- Applicare un segnale di 500 mV_{eff} 1 kHz alla presa cir
- Portare l'apparecchio in posizione "PAUSE, AUDIO EXTERN (E1)".
- Spingere il potenziometro 3068-2A (L) e 3068-2B (R) : centro meccanico.
- Regolare 3090 (R) e 3092(L) in modo che la modulazione sul misuratore della fluorescenza indichi 0 dB.



Ajustes en JDC

1. Modulaci3n de los fluor3metros (3090 R, 3092 L)

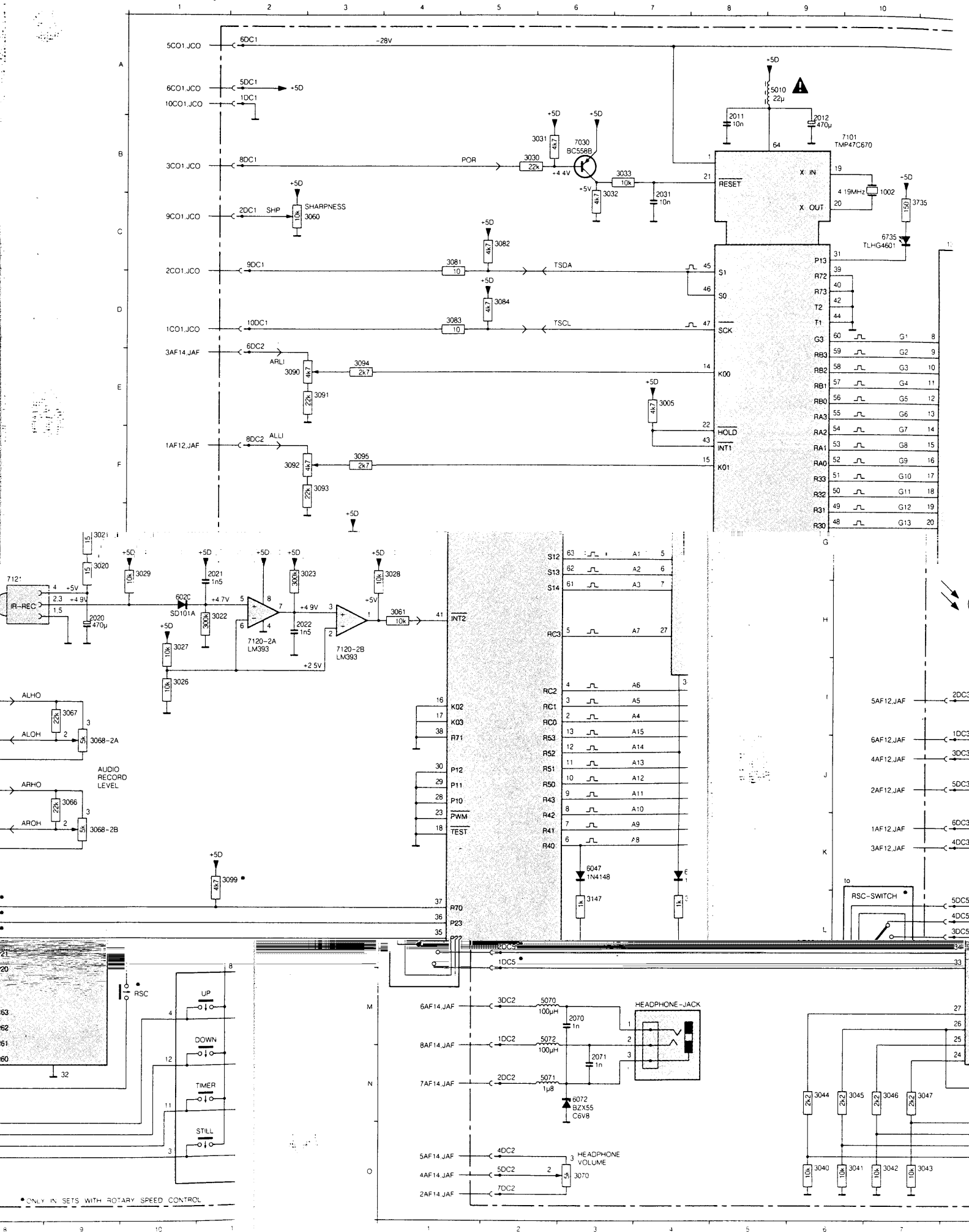
- Aplique una se1al de 500 mV_{eff} 1 kHz al clavijero cinch.
- Ponga el aparato en posici3n "PAUSE, AUDIO EXTERN (E1)".
- Empuje el potenci3metro 3068-2A (L) y 3068-2B (R) al centro mec1nico.
- Ajuste 3090 (R) y 3092 (L) de manera que el fluor3metro indique 0 dB.

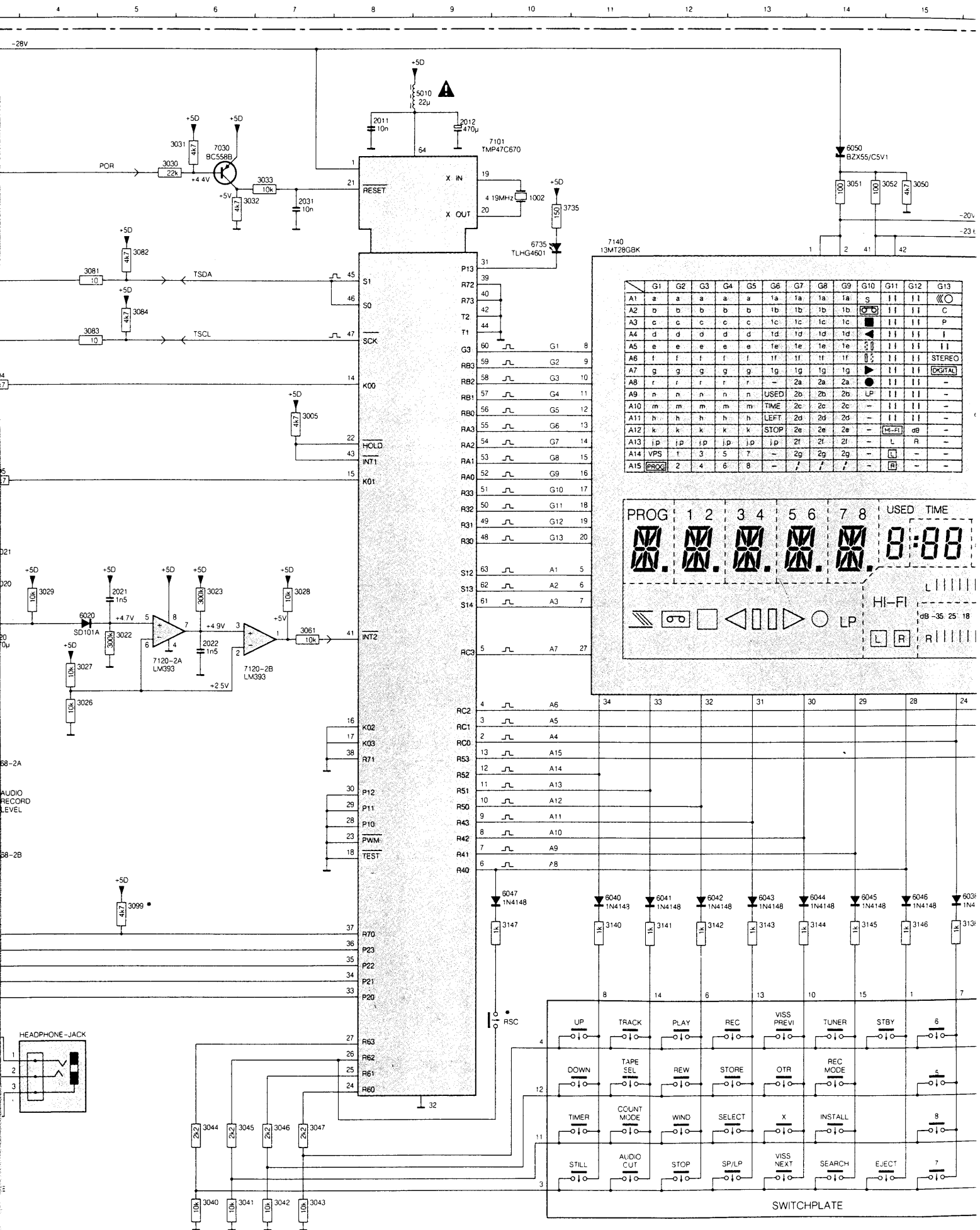
Regolazioni al JDC

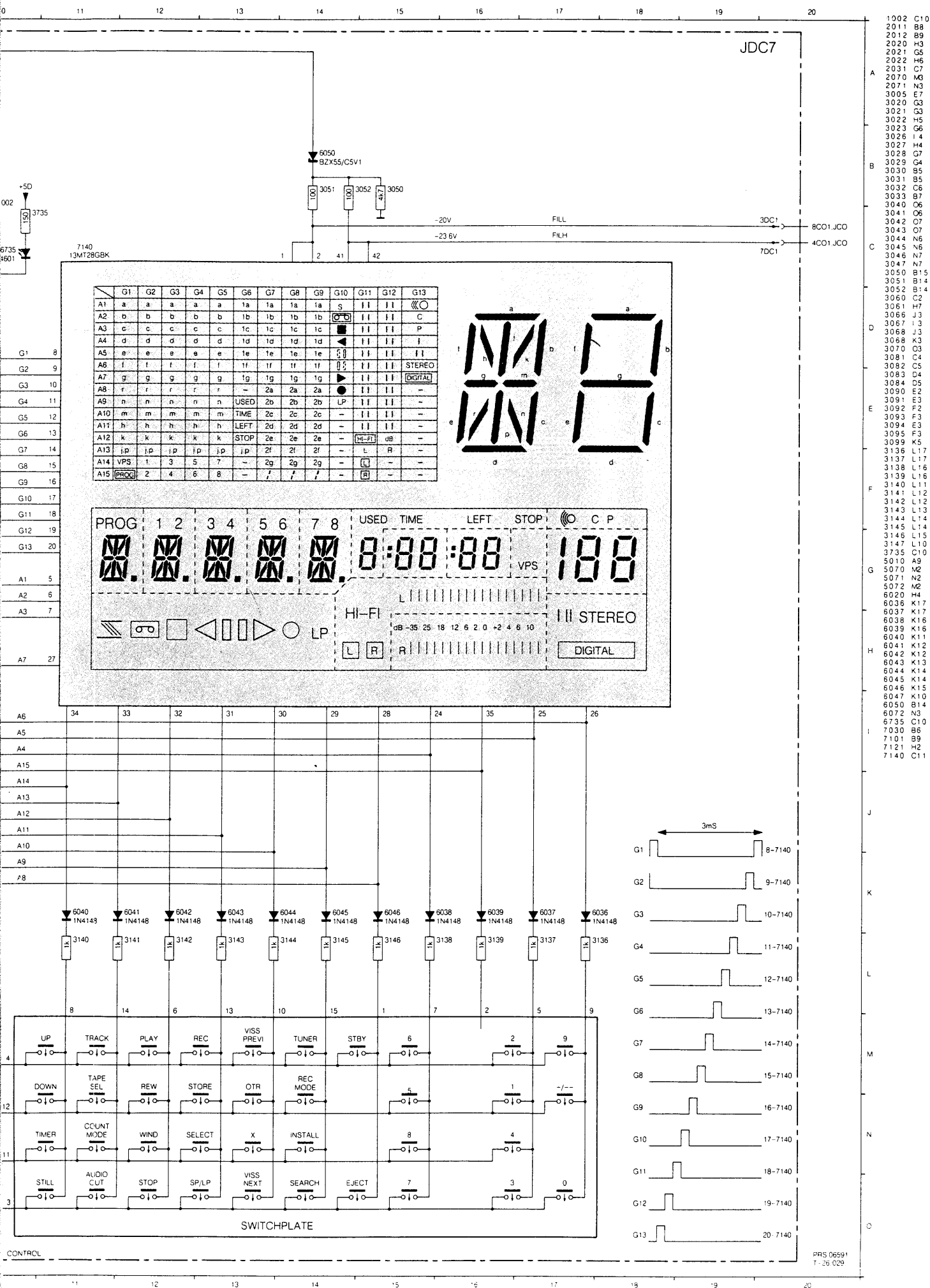
1. Modulazione dei misuratori della fluorescenza (3090 R, 3092 L)

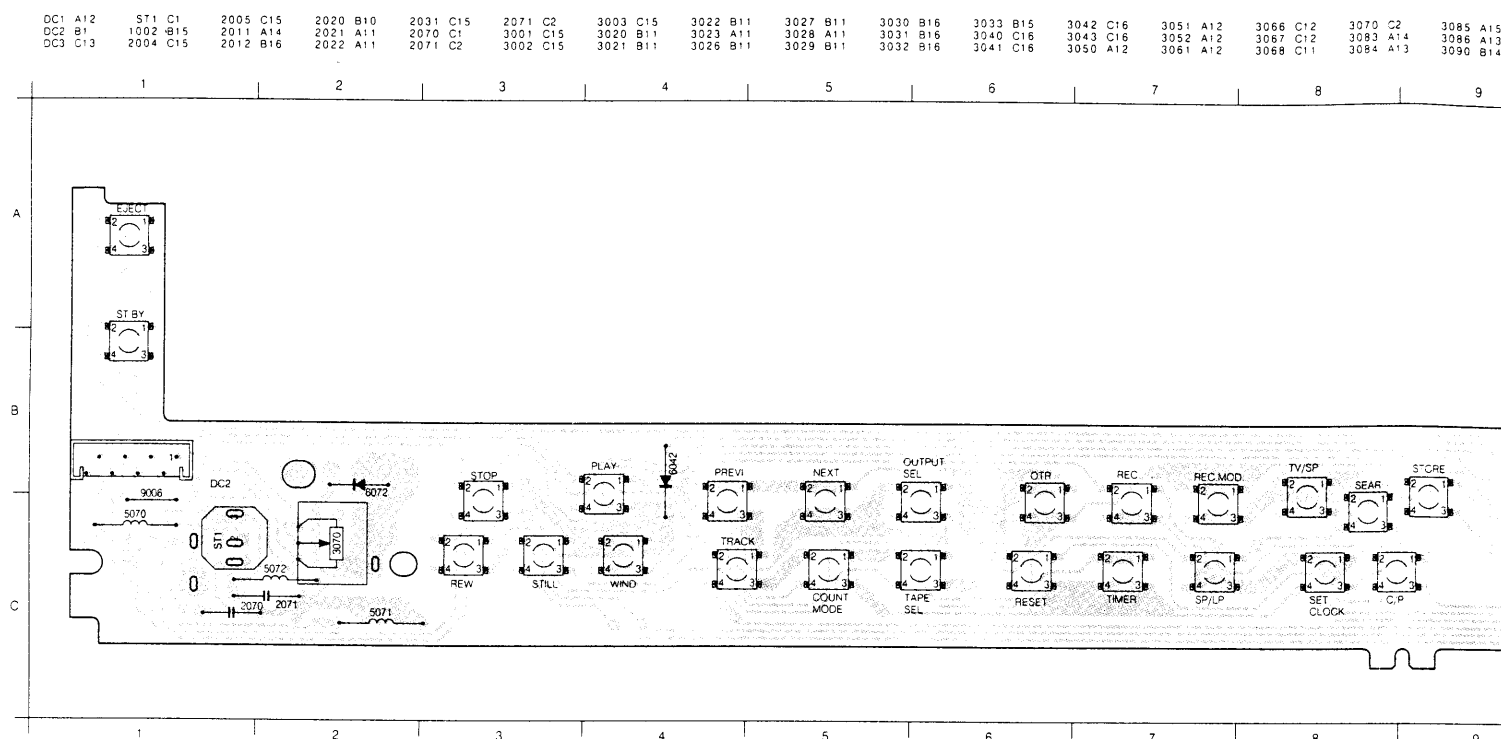
- Applicare un segnale di 500 mV_{eff} 1 kHz alla presa cinch.
- Portare l'apparecchio in posizione "PAUSE, AUDIO EXTERN (E1)".
- Spingere il potenziometro 3068-2A (L) e 3068-2B (R) al centro meccanico.
- Regolare 3090 (R) e 3092 (L) in modo che la modulazione sul misuratore della fluorescenza indichi 0 dB.

Operating panel JDC7









Einstellungen auf JDC

Aussteuerung der Fluoreszenzmesser (3090 R, 3092 L)

- Signal von 500 mV_{eff} 1 kHz zuführen an Cinch Buchse.
- Recorder in Position "PAUSE, AUDIO EXTERN (E1)".
- Schiebepotentiometer 3068-2A (L) und 3068-2B (R) in die mechanische Mitte.
- 3090 (R) und 3092 (L) so einstellen, daß die Aussteuerung am Fluoreszenzmesser 0 dB anzeigt.

Adjustment on JDC

Adjustment of the deflection of the bargraph (3090 R, 3092 L)

- Apply a 500 mV_{rms} 1 kHz signal to the cinch connector.
- Recorder in position "PAUSE, AUDIO EXTERN (E1)".
- Slide potentiometers 3068-2A (L) and 3068-2B (R) in the mechanical middle position.
- Adjust 3090 (R) and 3092 (L) so, that the deflection of the bargraph is 0 dB.

Afregelingen op JDC

1. Uitsturing bargraph display (3090 R, 3092 L)

- Sluit een audio signaal 500 mV_{eff} 1 kHz aan op de cinch pluggen.
- Recorder in positie "PAUSE, AUDIO EXTERN (E1)".
- Plaats schuifpotmeters 3068-2A (L) en 3068-2B (R) in de mechanische middenstand.
- Regel 3090 (R) en 3092 (L) zodanig af dat uitslag op het bargraph display 0 dB is.

Ajustages sur la JDC

1. Saturation de l'affichage du diagramme à barres (3090 droite, 3092 gauche)

- Appliquer un signal audio de 500 mV_{eff} 1 kHz sur les prises cinch.
- Mettre l'appareil sur "PAUSE, AUDIO EXTERN (E1)".
- Mettre les potentiomètres à coulisse 3068-1A (gauche) et 3068-2B (droite) en position médiane.
- Ajuster 3090 (droite) et 3092 (gauche) pour que la déviation du diagramme à barres à l'afficheur soit de 0 dB.

Ajuste:

1. Modi:

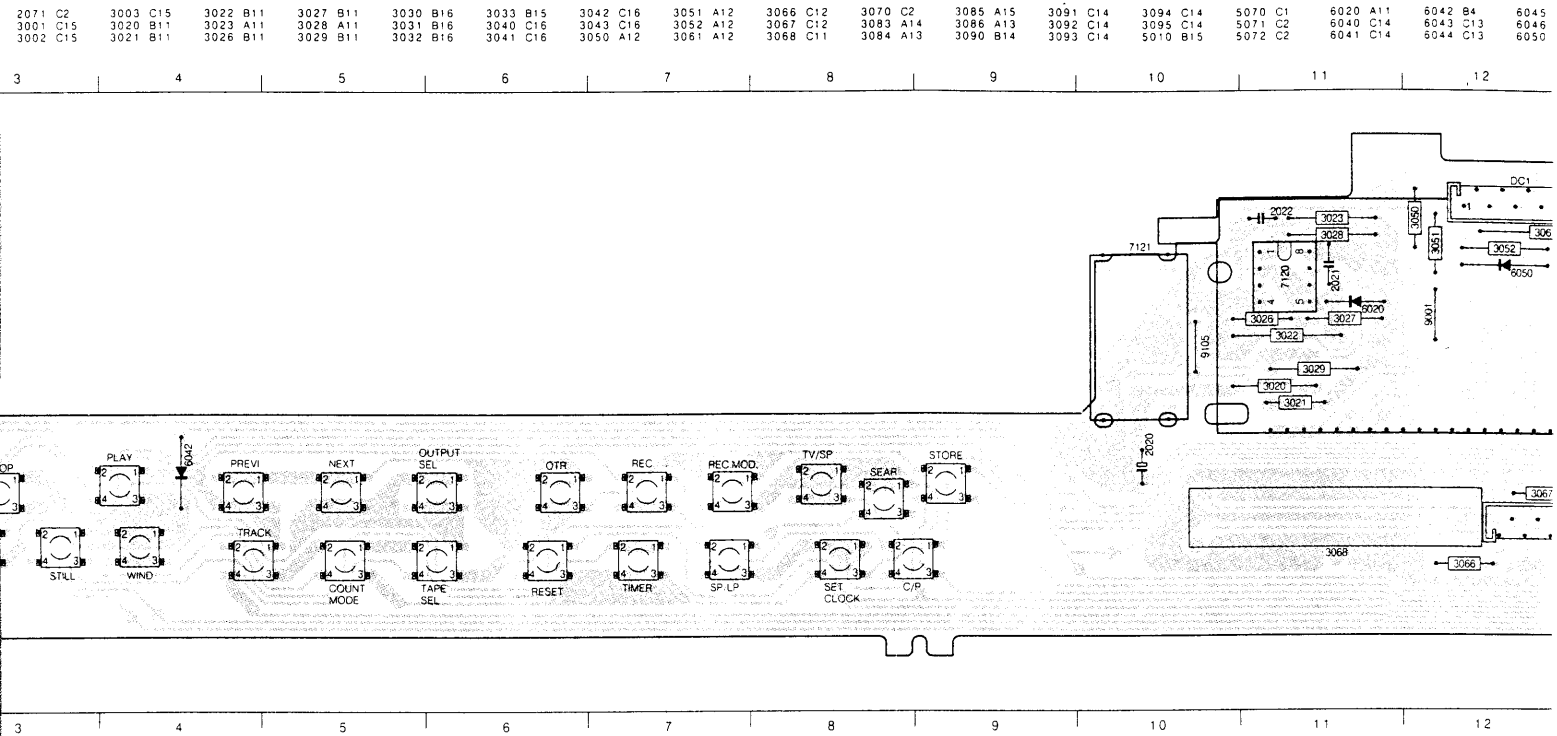
- Appliq
- Pong (E1)"
- Empt
- centr
- Ajust
- indiq

Regola

1. Modi (3090 F)

- Applik
- Porta EXTE
- Sping centr
- Rego modu 0 dB.

For Service Manuals
MAURITRON SERVICES
8 Cherry Tree Road, Chinnor
Oxfordshire, OX9 4QY.
Tel (01844) 351694
Fax (01844) 352554
email:- sales@mauritron.co.uk



Afregelingen op JDC

1. Uitsturing bargraph display (3090 R, 3092 L)

- Sluit een audio signaal 500 mV_{eff} 1 kHz aan op de cinch pluggen.
- Recorder in positie "PAUSE, AUDIO EXTERN (E1)".
- Plaats schuifpotmeters 3068-2A (L) en 3068-2B (R) in de mechanische middenstand.
- Regel 3090 (R) en 3092 (L) zodanig af dat uitslag op het bargraph display 0 dB is.

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Ajustages sur la JDC

1. Saturation de l'affichage du diagramme à barres (3090 droite, 3092 gauche)

- Appliquer un signal audio de 500 mV_{eff} 1 kHz sur les prises cinch.
- Mettre l'appareil sur "PAUSE, AUDIO EXTERN (E1)".
- Mettre les potentiomètres à coulisse 3068-1A (gauche) et 3068-2B (droite) en position médiane.
- Ajuster 3090 (droite) et 3092 (gauche) pour que la déviation du diagramme à barres à l'afficheur soit de 0 dB.

Ajustes en JDC

1. Modulaci3n de los fluorímetros (3090 R, 3092 L)

- Aplique una se1al de 500 mV_{eff} 1 kHz al clavijero cinct
- Ponga el aparato en posici3n "PAUSE, AUDIO EXTEF (E1)".
- Empuje el potenciómetro 3068-2A (L) y 3068-2B (R) al centro mecánico.
- Ajuste 3090 (R) y 3092 (L) de manera que el fluorímetr indique 0 dB.

Regolazioni al JDC

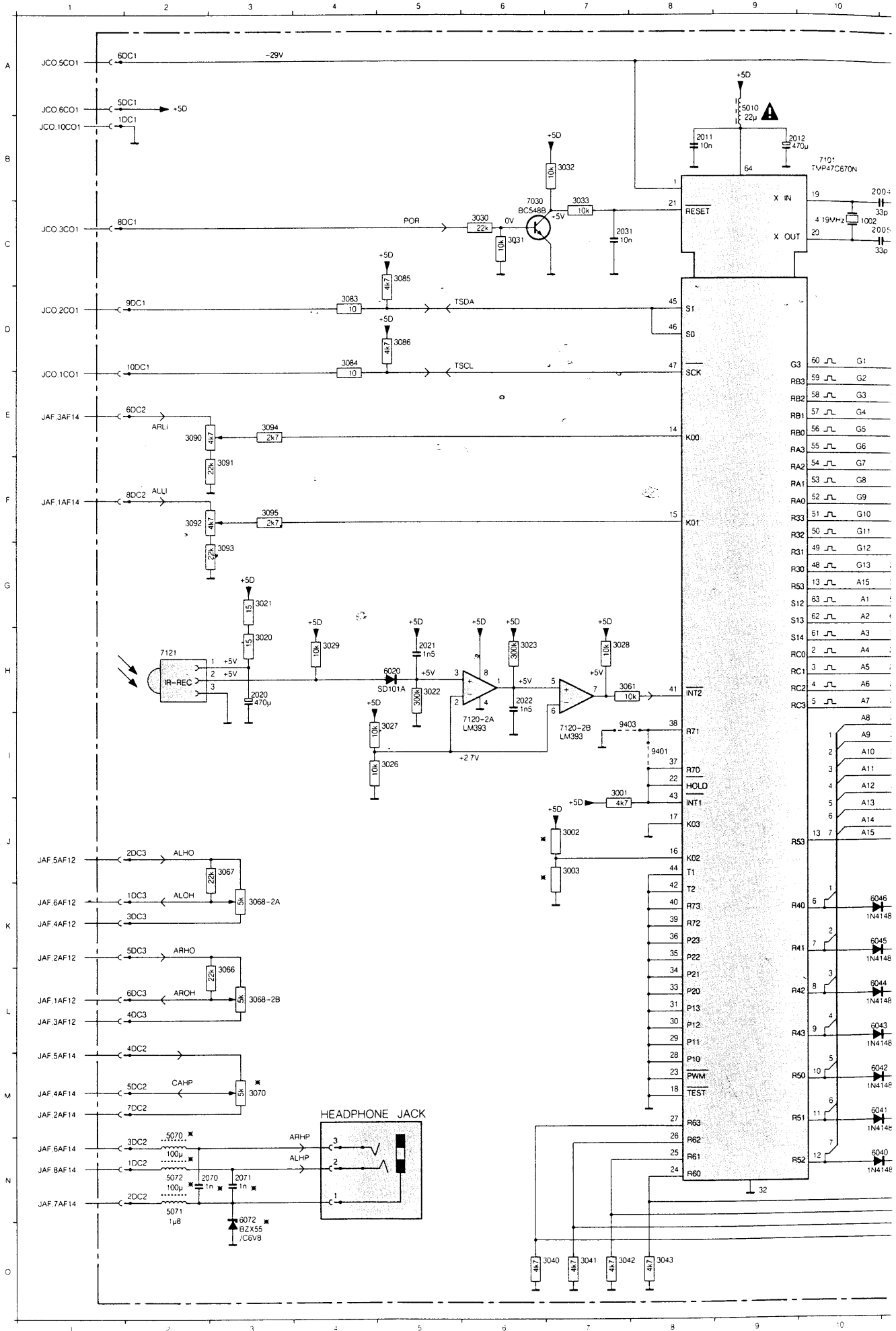
1. Modulazione dei misuratori della fluorescenza (3090 R, 3092 L)

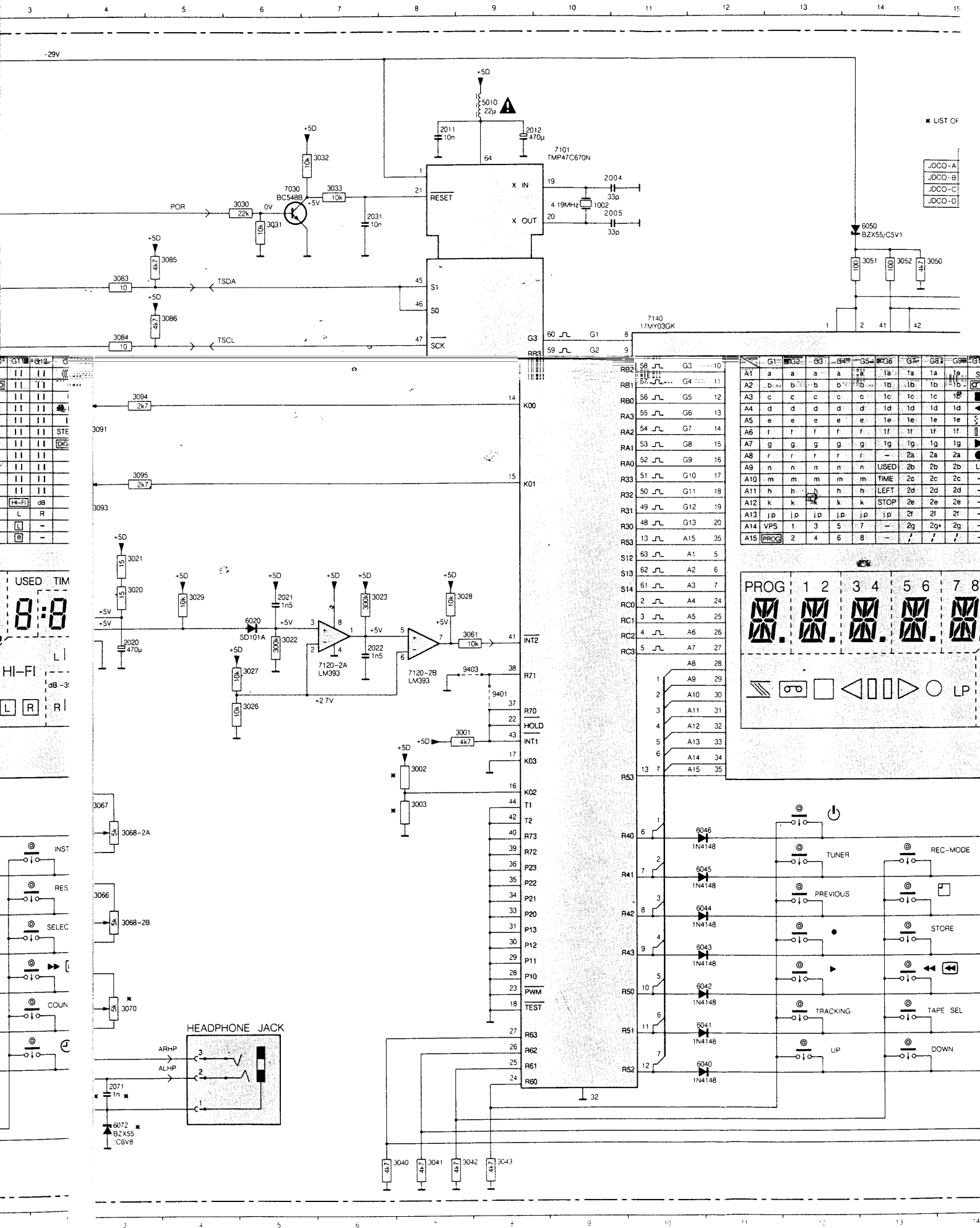
- Applicare un segnale di 500 mV_{eff} 1 kHz alla presa cin
- Portare l'apparecchio in posizione "PAUSE, AUDIO EXTERN (E1)".
- Spingere il potenziometro 3068-2A (L) e 3068-2B (R) a centro meccanico.
- Regolare 3090 (R) e 3092 (L) in modo che la modulazione sul misuratore della fluorescenza indichi 0 dB.

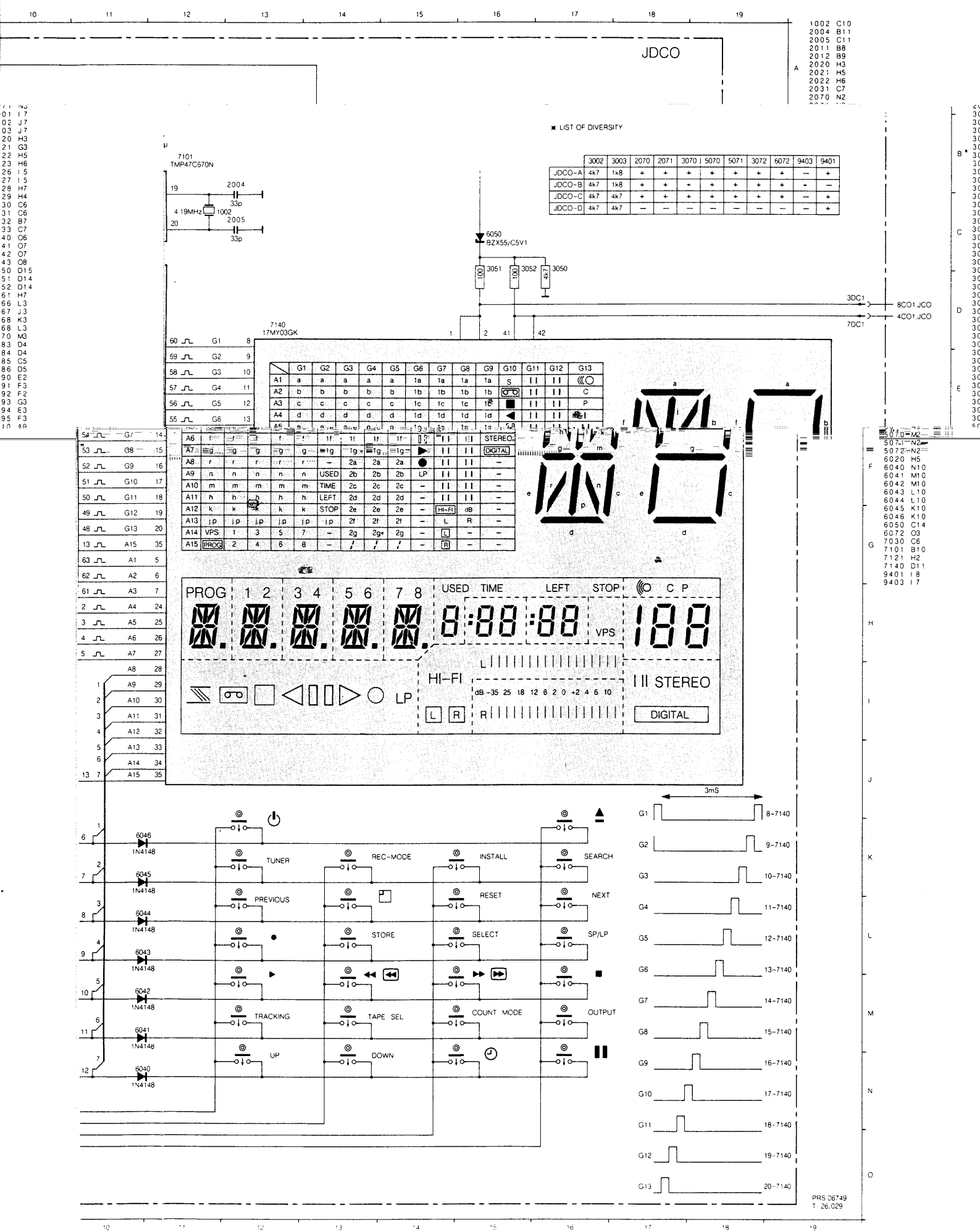


- Applicare un segnale di 500 mV_{eff} 1 kHz alla presa cinch.
- Portare l'apparecchio in posizione "PAUSE, AUDIO EXTERN (E1)".
- Spingere il potenziometro 3068-2A (L) e 3068-2B (R) al centro meccanico.
- Regolare 3090 (R) e 3092(L) in modo che la modulazione sul misuratore della fluorescenza indichi 0 dB.

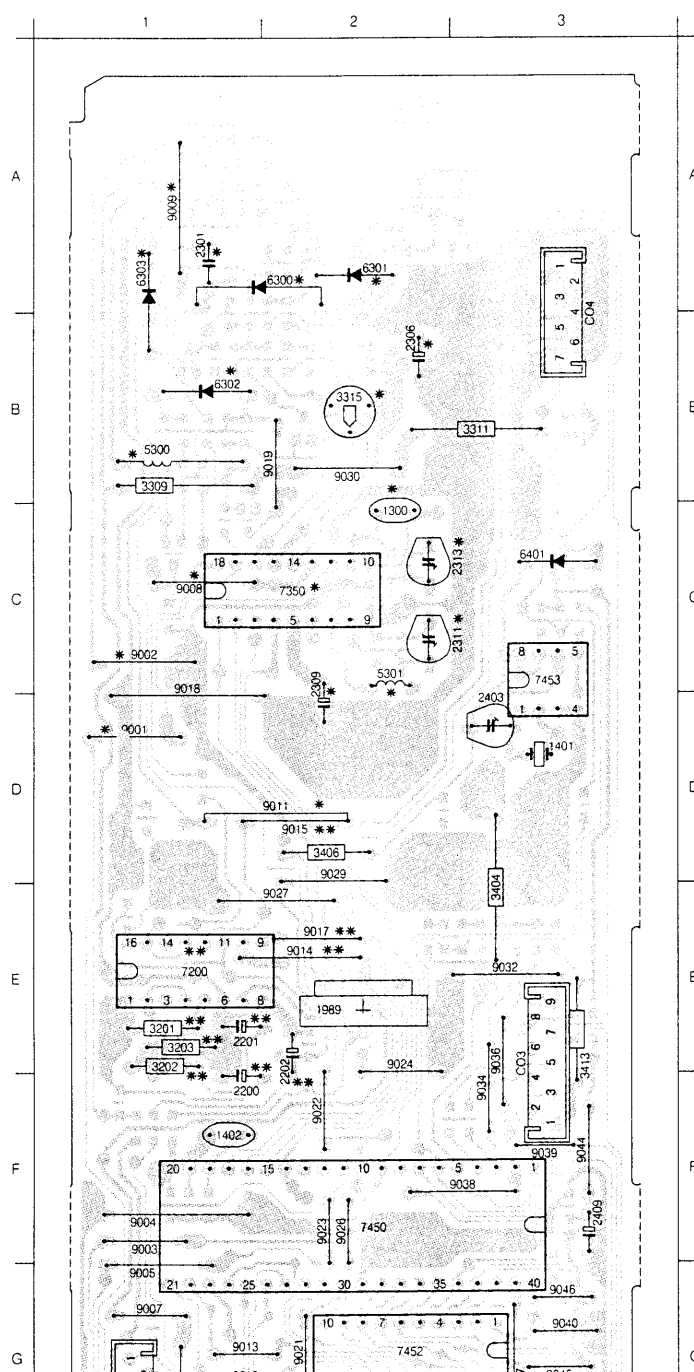
Operating panel JDC0







CO1	H2	2403	D3	6301	A2	9008	C1	9025	H2	9044	F3
CO2	G1	2402	F3	6302	B1	9009	A1	9026	F2	9045	G3
CO3	F3	3201	E1	6303	A1	9010	G1	9027	E2	9046	G3
CO4	B3	3202	E1	6401	C3	9011	D2	9029	D2		
1300	C2	3203	E1	7200	E1	9012	H1	9030	B2		
1401	D3	3309	B1	7350	C2	9013	G1	9031	H2		
1402	F1	3311	B3	7450	F2	9014	E2	9032	H2		
1989	E2	3315	B2	7451	H2	9015	D2	9033	E2		
2202	F1	3404	F3	7452	G2	9017	E2	9034	F3		
2201	E1	3406	D2	7453	C3	9018	C1	9036	F3		
2202	F2	3413	F3	9001	D1	9019	B2	9037	G3		
2301	A1	5300	B1	9002	C1	9020	G2	9038	F2		
2306	B2	5301	C2	9003	F1	9021	G2	9039	F3		
2309	D2	5750	G1	9004	F1	9022	F2	9040	G3		
2311	C1	5770	E1	9005	G1	9023	F2	9041	H3		
2313	C3	6300	A2	9007	G1	9024	E2	9043	H3		



Einstellungen am JCO

1. Einstellung der "timer-clock"-Frequenz (2403)
 - einen Frequenzmesser mittels einer FET-Sonde an Pin 2 von IC 7453 anschließen
 - 2403 so einstellen, daß die Frequenz $32,768 \text{ kHz} \pm 0.12 \text{ Hz}$ beträgt

Einstellungen für den OSD Teil

- 2.1 Einstellung der Schriftposition (2311)
 - Kreistestbild am Antenneneingang einspeisen
 - Gerät in "STOP" Position bringen und "OSD" Taste auf der Fernbedienung drücken
 - mit 2311 die Schrift so einstellen, daß am linken und rechten Bildschirmrand der gleiche Abstand ist.

- kein Signal am Antenneneingang
- Videoausgang an der Scartbuche mit 75 Ω abschließen "TIMER" Taste drücken
- mit 3315 das Videosignal an der Scartbuche auf 0.85 V mit dem Oszilloskop einstellen

- einen Frequenzmesser mittels einer FET-Sonde an Pin 11 von IC 7350 schalten
- 2313 so einstellen, daß die Frequenz 17,7345MHz $\pm$ 100Hz beträgt

Settings of the JCO

- 1. Setting of the "timer clock" frequency (2403)
 - Connect a frequency meter to the pin 2 of IC 7453 by means of an FET sample
 - Set 2403 so that the frequency is $32,768 \text{ kHz} \pm 0.12 \text{ Hz}$

Setting of the OSD-part

- 2.1 Setting of the writing position (2311)
 - Connect a circle test pattern to the aerial input
 - Put the unit in position "STOP" and press "OSD" key on remote control
 - Adjust writing with 2311 so that the margin is the same the left and right edge of the screen.
- 2.2 Setting the video output level (3315)
 - No signal at the aerial input
 - Terminate video output at the Scart jack with 75 Ω
 - Press "TIMER" key
 - Set the video signal at the Scart jack to 0.85 V with 3315 with the aid of the oscilloscope
- 2.3 Setting the chroma auxiliary carrier (2313)
 - Connect a frequency meter to pin 11 of IC 7350 by means of an FET sample
 - Set 2313 so that the frequency is $17.7345 \text{ MHz} \pm 100 \text{ Hz}$

Instellingen op de JCO

- 1. Instelling van de "timer-clock"-frequentie (2403)
 - een frequentiemeter via een FET-testpen op pin 2 van IC 7453 aansluiten
 - 2403 zodanig instellen dat de frequentie 32,768kHz ± 0.12 Hz bedraagt

Instellingen or het OSD-gedeelte

- 2.1 Instelling van de tekstpositie (2311)
 - cirkelvormig testbeeld aan de antenne-ingang ingeven
 - toestel op "STOP" schakelen en de "OSD"-toets op de afstandsbediening indrukken
 - met behulp van 2311 de tekst zodanig instellen dat aan de linker en rechter beeldschermrand dezelfde afstand is

2203 D3	2411 F3	3314 B3	3403 C1	3811 E1
2302 A3	2412 H3	3316 A3	3405 C1	3812 B3
2304 A2	2413 F1	3316 D3	3407 E1	3815 F3
2305 B2	3200 F3	3317 B3	3408 E1	7300 A2
2307 B3	3204 E2	3318 B2	3409 F2	7301 A1
2308 B2	3205 G3	3319 B2	3410 F1	7302 A2
2310 C2	3300 A2	3320 B3	3411 E1	7303 B3
2311 C2	3301 A2	3321 C3	3412 F1	7304 C3

0
chage écran (2311)
sur l'entrée d'antenne
on "STOP" et appuyer
lécommande
elle façon qu'il y ait
bord droit et sur le bord
le 2311

e vidéo (3315)
sur l'entrée d'antenne
se SCART avec 75 Ω
ER"
e signal vidéo sur la
l'oscilloscope)
ur auxiliaire Chroma (2313)
e fréquence s'élève à 17,7345MHz ±

el "timer-clock" (reloj-
uencia, por medio de una
nexión 2 del IC 7453
la frecuencia sea de 32,768kHz ±

e escritura (2311)
de prueba a la entrada de antena
n de "STOP" y oprimir la tecla
ra de forma que quede el mismo
izquierdo de la pantalla

da de video (3315)
de antena
n el conector "Scart" con 75 Ω
e video en el conector a 0,85 V con

auxiliar de croma (2313)
uencia mediante una sonda de
de IC 7350
e la frecuencia sea de

a frecuencia d'orologio (2403)
enzimetro a Pin 2 di IC 7453 con l'aiuto di un
modo che la frequenza sia 32,768kHz ±

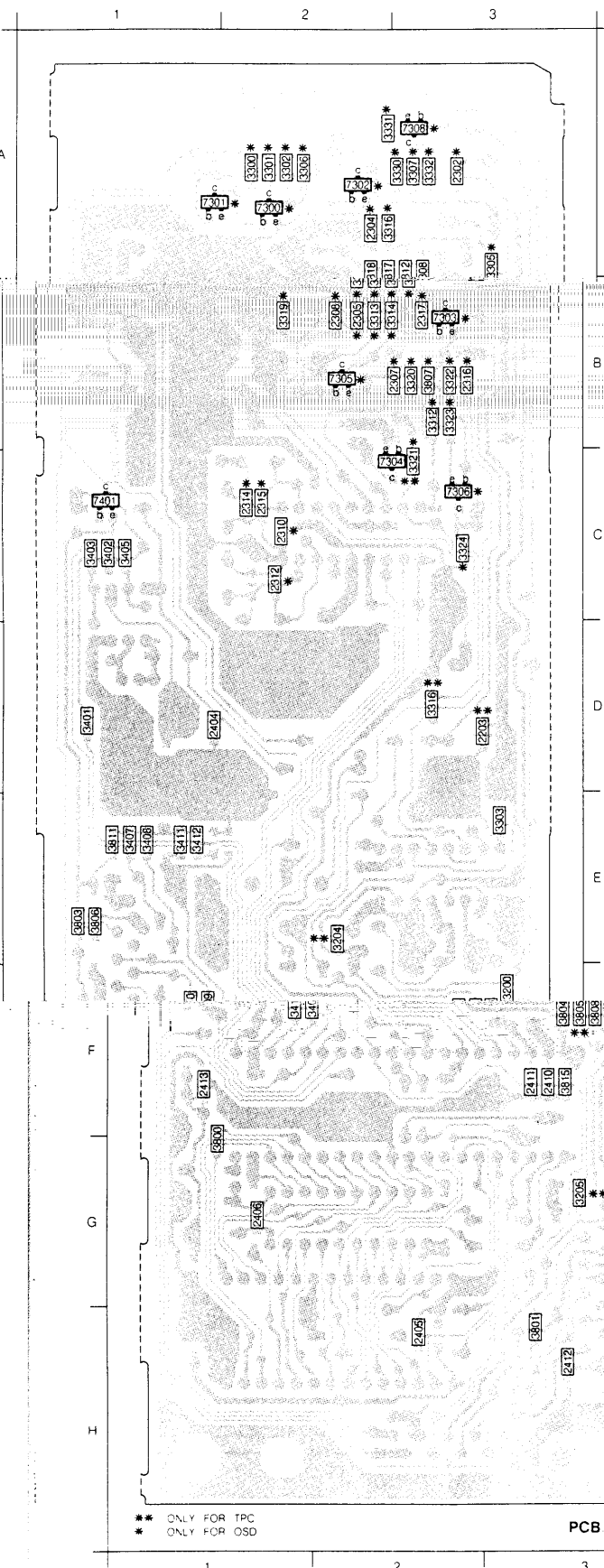
parte OSD

la posizione di scrittura (2311)
nale test con cerchio all'entrata d'antenna
chio in posizione "STOP" e premere il tasto
mando
ra con 2311 in modo che i margini destro e
ermo abbiano la stessa distanza

l livello d'uscita video (3315)
ssun segnale all'entrata d'antenna
video alla presa Euro con 75 Ω
TIMER"
5 il segnale video alla presa Euro a 0,85 V
iloscopio

la portante ausiliaria croma (2313)
un separatore FET un frequenzimetro a Pin 11
modo che la frequenza sia 17,7345MHz ±

2314 C2	3302 A2	3322 B3	3800 G1	7305 B2
2315 C2	3303 E3	3323 B3	3801 H3	7306 C3
2316 B3	3305 B3	3324 C3	3803 E1	7308 A3
2317 B3	3306 A2	3330 A3	3804 F3	7401 C1
2404 D2	3307 A3	3331 A3	3805 F3	
2405 H2	3308 B3	3332 A3	3806 E1	
2406 G1	3312 B3	3401 D1	3807 B3	
2410 F3	3313 B3	3402 C1	3808 F3	



Ajustages sur la JCO

- Réglage de la fréquence du "TIMER-CLOCK" (2403)
 - brancher un fréquencemètre au moyen d'une sonde effet de champ sur la broche 2 de l'IC7453
 - régler 2403 de telle façon que la fréquence s'élève NRà $32,768\text{kHz} \pm 0,12\text{Hz}$

Ajustages pour la partie OSD

- Réglage de la position affi-
 - appliquer une mire de test s
 - mettre l'appareil sur la posi
 - sur la touche "OSD" de la té
 - réglér l'affichage écran de té
 - le même espacement sur le
 - gauche de l'écran, à l'aide c
- Réglage du signal de sorti-
 - ne pas appliquer de signal s
 - relier la sortie image à la pri
 - appuyer sur la touche "TIME
 - au moyen de 3315, ajuster l
 - prise SCART à 0,85 V (avec
- Réglage du courant porte-
 - brancher un fréquencemètre
 - champ sur le broche 11 de l'IC
 - régler 2313 de façon que la fr
 - 100Hz

Ajustes del JCO

- Regulación de la frecuencia d-
contador) (2403)
 - Conectar un medidor de frec
 - sonda de prueba FET a la co
 - Regular el 2403 de forma que
 - 0,12 Hz

Ajustes del circuito OSD

- Regulación de la posición d-
 - Enviar una imagen de círculo
 - Colocar el aparato en posici
 - "OSD" del mando a distancia
 - Con el 2311 regular la escritu
 - margen en el lado derecho e
- Regulación del nivel de salid-
 - Ninguna señal en la entrada
 - Terminar la salida de video e
 - Oprimir la tecla de "TIMER"
 - Con 3315, regular la señal de
 - el osciloscopio.
- Regulación de la portadora
 - Conectar un medidor de frec
 - prueba FET a la conexión 11
 - Regular el 2313 de forma que
 - 17,7345 MHz ± 100 Hz

Regolazioni al JCO

- Regolazione de-
 - collegare un freq
 - separatore FET
 - regolare 2403 in
 - 0,12 Hz

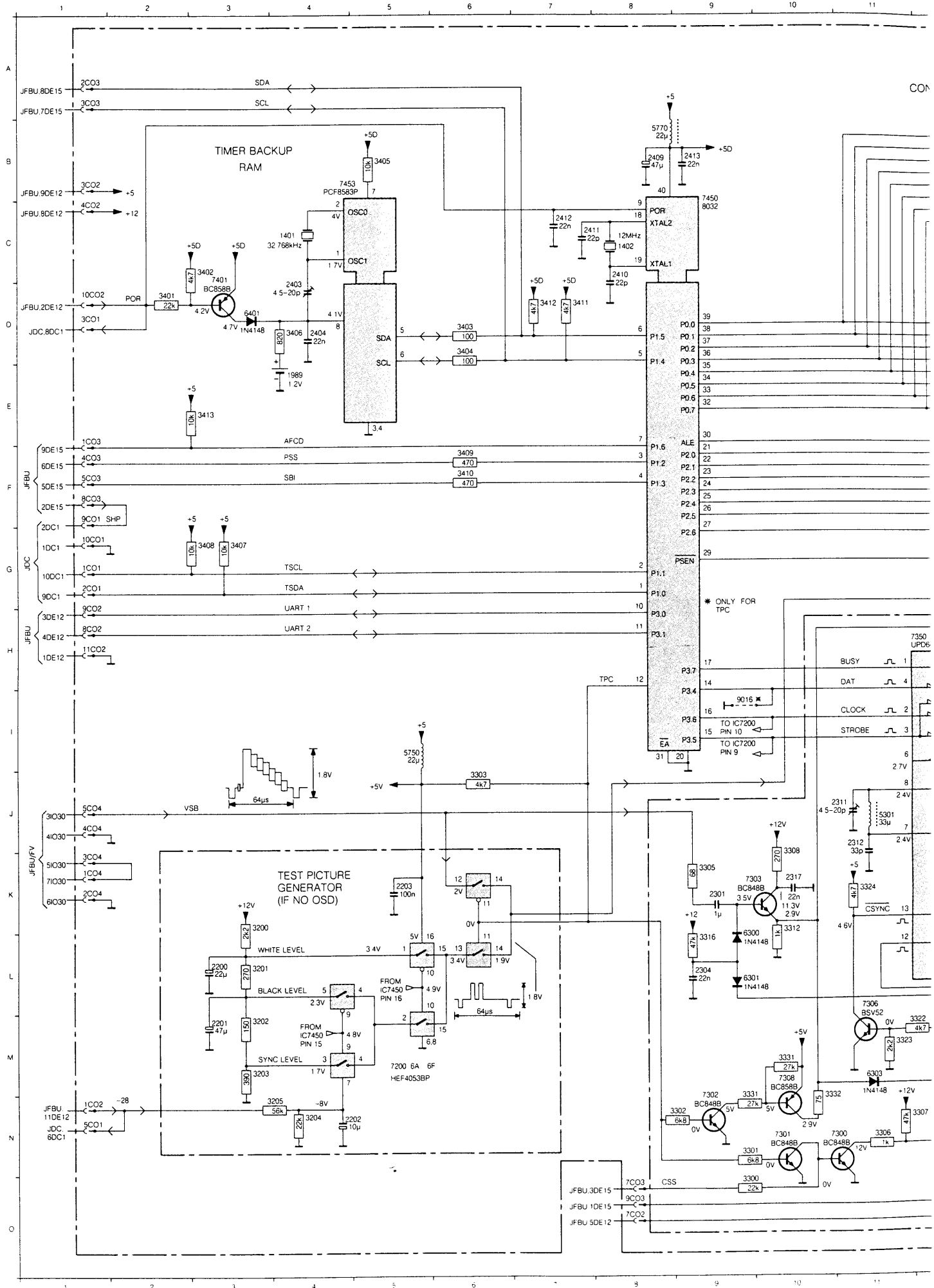
Regolazioni per la

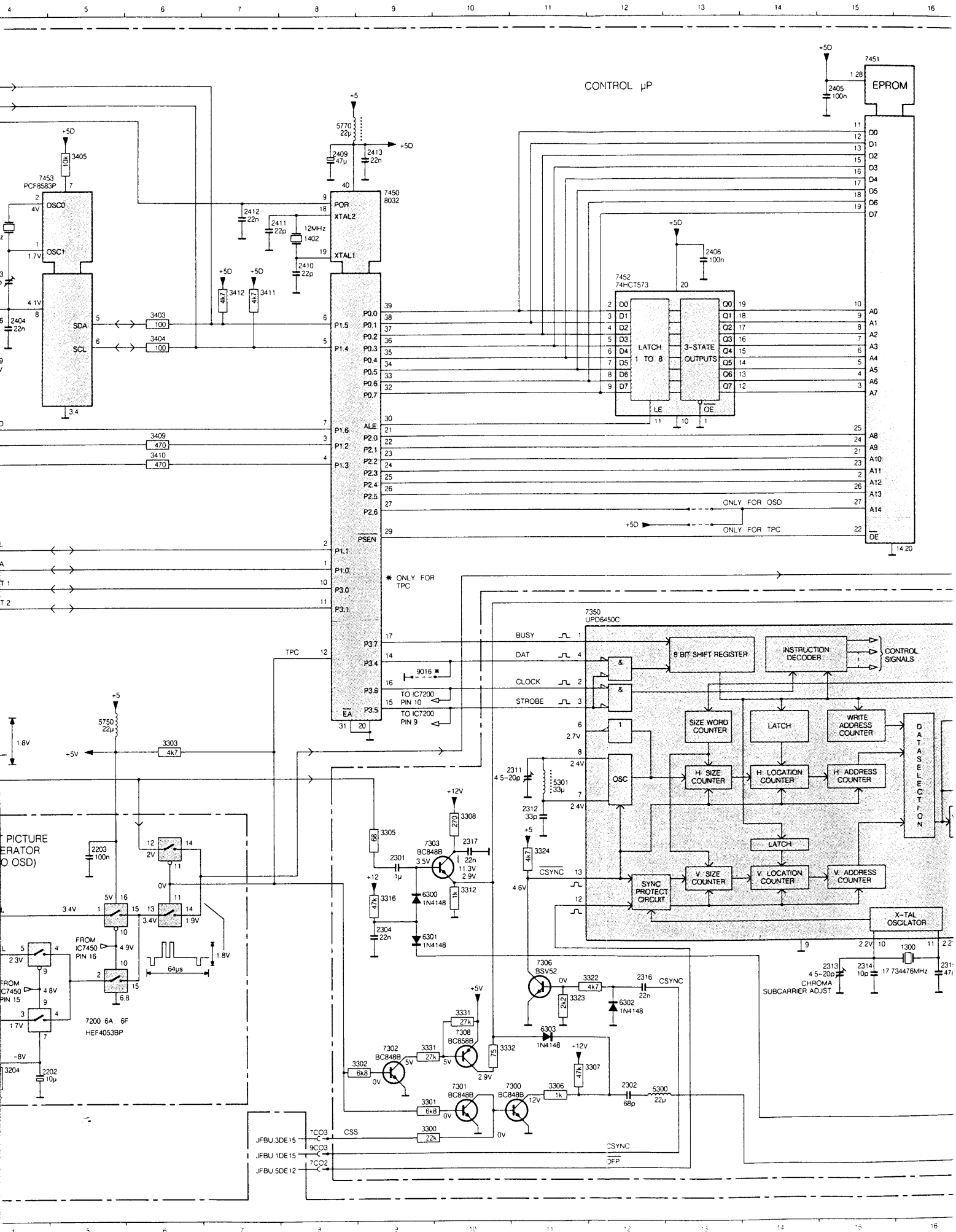
- Regolazione de-
 - applicare un seg
 - portare l'apparec
 - "OSD" sul teleco
 - regolare la scrittu
 - sinistro dello sch
- Regolazione de-
 - non applicare ne
 - chiudere l'uscita
 - premere il tasto "
 - regolare con 331
 - misurati con l'osc
- Regolazione de-
 - collegare tramite
 - di IC 7350
 - regolare 2313 in
 - 100Hz

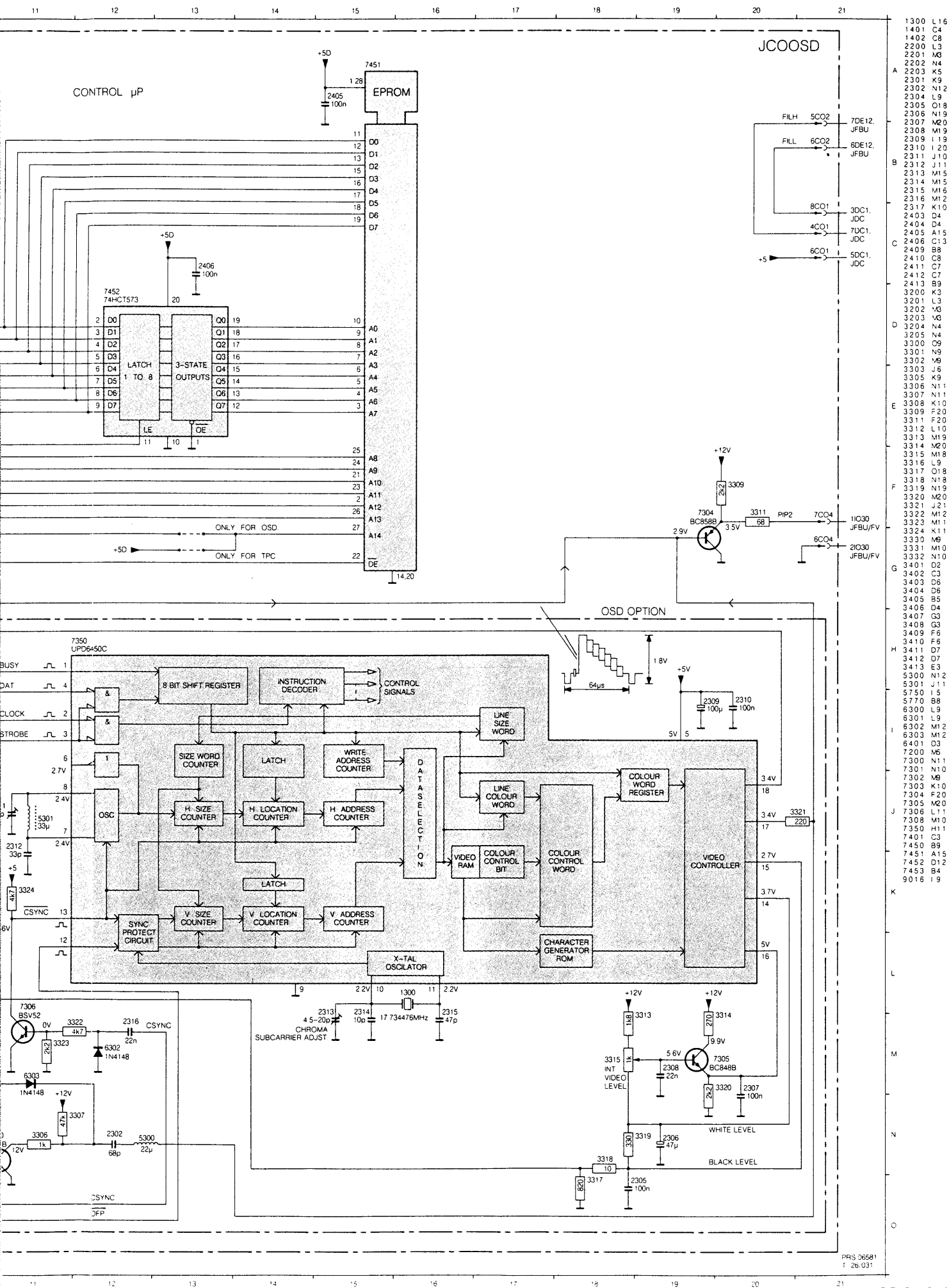
** ONLY FOR TPC
* ONLY FOR OSD

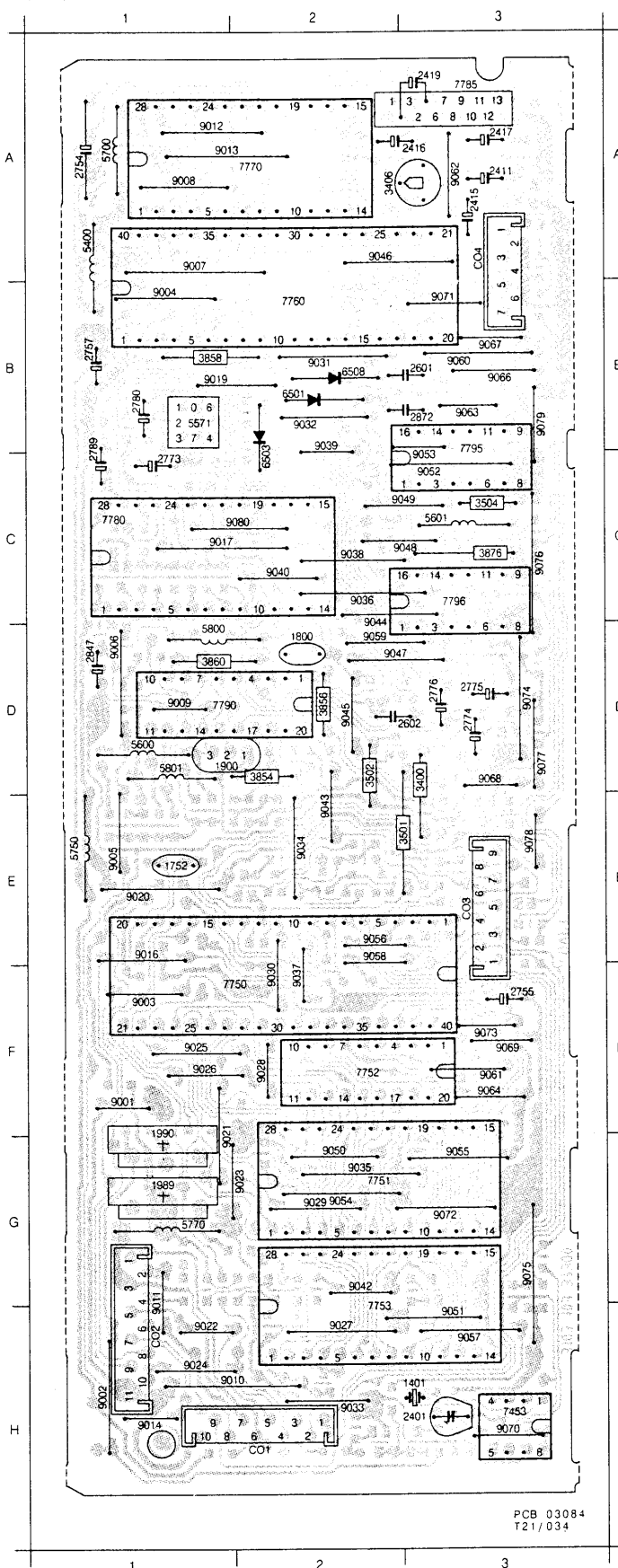
PCB 03097

Control board JCO/OSD









COI	H2	9066	B3
CO2	H1	9067	B3
CO3	E3	9068	D3
CG4	A3	9069	F3
1401	H2	9070	H3
1752	E1	9071	B3
1800	D2	9072	G3
1801	D1	9073	F3
1989	G1	9074	D3
1990	G1	9075	G3
2401	H2	9076	C3
2411	A3	9077	D3
2415	A3	9078	E3
2416	A3	9079	B3
2417	A3	9080	C1
2419	A3		
2601	B3		
2602	D2		
2754	A1		
2755	F3		
2757	B1		
2773	C1		
2774	D3		
2775	D3		
2776	D3		
2780	B1		
2789	C1		
2847	D1		
2872	B3		
3400	D3		
3406	A2		
3501	E3		
3502	D2		
3504	C3		
3854	D2		
3856	D2		
3859	B1		
3860	D1		
3876	C3		
5400	A1		
5571	B1		
5600	D1		
5601	C3		
5700	A1		
5750	E1		
5770	G1		
5800	D1		
5801	D1		
6501	B2		
6503	C2		
6508	B2		
7453	H3		
7750	F1		
7751	G2		
7752	F2		
7753	H2		
7760	B2		
7770	A2		
7780	C1		
7785	A3		
7790	D1		
7795	C3		
7796	C3		
9001	F1		
9002	H1		
9003	F1		
9004	B1		
9005	E1		
9006	D1		
9007	A1		
9008	A1		
9009	D1		
9010	H1		
9011	H1		
9012	A1		
9013	A1		
9014	H1		
9016	E1		
9017	C1		
9019	B1		
9020	E1		
9021	G1		
9022	H1		
9023	G2		
9024	H1		
9025	F1		
9026	F1		
9027	H2		
9028	F2		
9029	G2		
9030	F2		
9031	B2		
9032	B2		
9033	H2		
9034	E2		
9035	G2		
9036	G2		
9037	F2		
9038	C2		
9039	B2		
9040	C2		
9042	G2		
9043	E2		
9044	D2		
9045	D2		
9046	A2		
9047	D2		
9048	C2		
9049	C2		
9050	G2		
9051	H3		
9052	C3		
9053	C3		
9054	G2		
9055	G3		
9056	E2		
9057	H3		
9058	E2		
9059	D2		
9060	B3		
9061	F3		
9062	A3		
9063	B3		
9064	F3		

Einstellung an JCOVPT

Einstellung der "timer-clock" Frequenz (2401)

- Einen Frequenzmesser mittels FET-Tastkopf an Anschluß 2 von IC7453 schalten
- 2401 so regeln, daß die Frequenz $32,768 \text{ kHz} \pm 0,12 \text{ Hz}$ beträgt

Einstellung der AGC (3406)

- Das Gerät auf einen Sender von d. Antenne abstimmen
- Ein Oszilloskop an Pin 14 von IC7785 anschließen
- Mit 3406 das Videosignal auf 1,85 V_{SS} einstellen

Adjustments on JCOVPT

Setting of the timer clock frequency (2401)

- Connect a frequency counter via a FET probe to pin 2 of IC7453
- Adjust 2401 until the frequency is $32.768 \text{ kHz} \pm 0.12 \text{ Hz}$

Setting of the AGC (3406)

- Tune the set to a signal via the aerial
- Connect an oscilloscope to pin 14 IC7785
- Adjust the video signal to 1,85 V_{pp} with 3406

Instellingen op JCOVPT

Instelling van de klokfrekwentie (240

- Sluit een frekwentieteller via een FET probe aan op pin 2 van IC745
- Regel 2401 af zodat de frekwentie $32,768 \text{ kHz} \pm 0,12 \text{ Hz}$ is

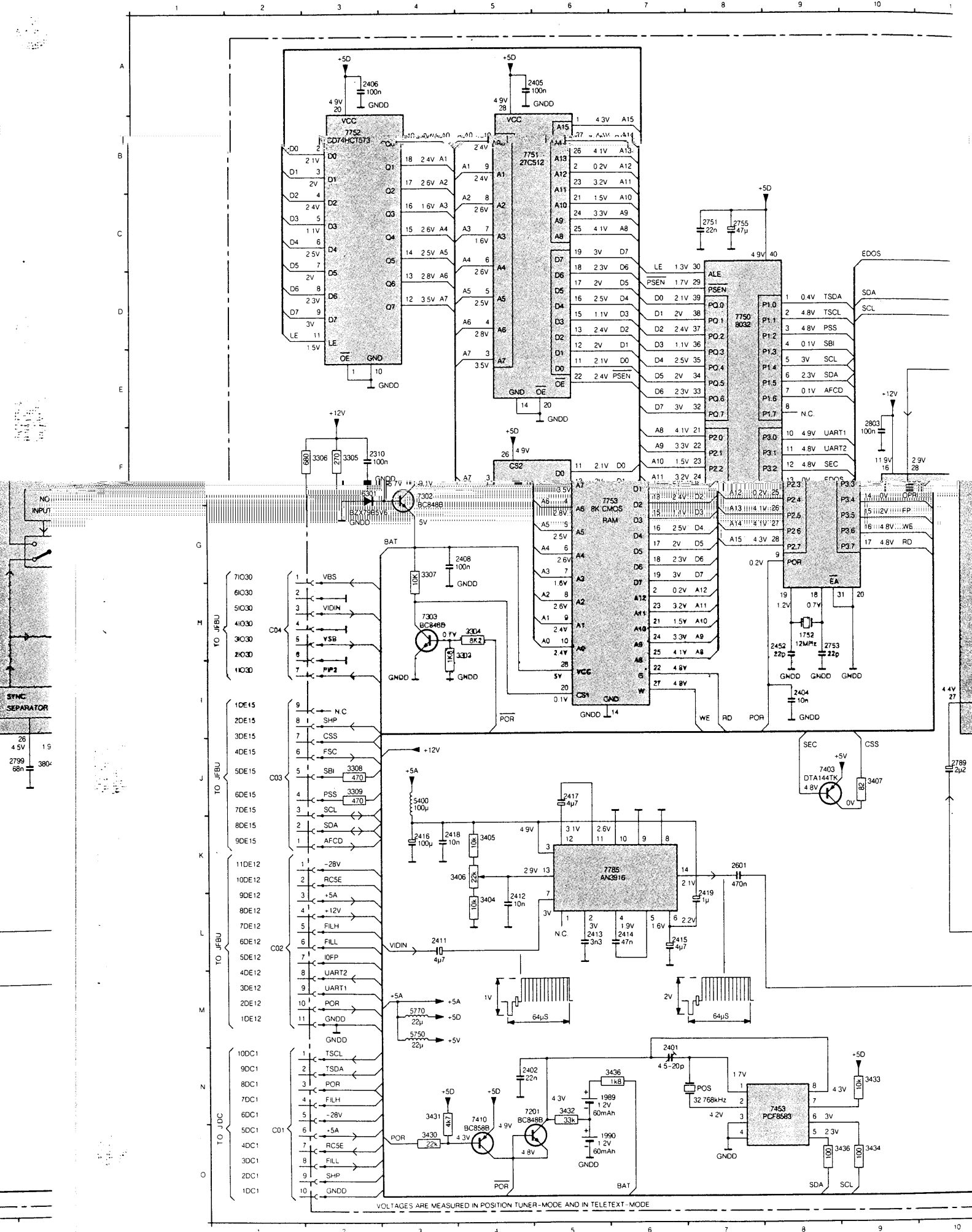
Instellingen van de AGC (3406)

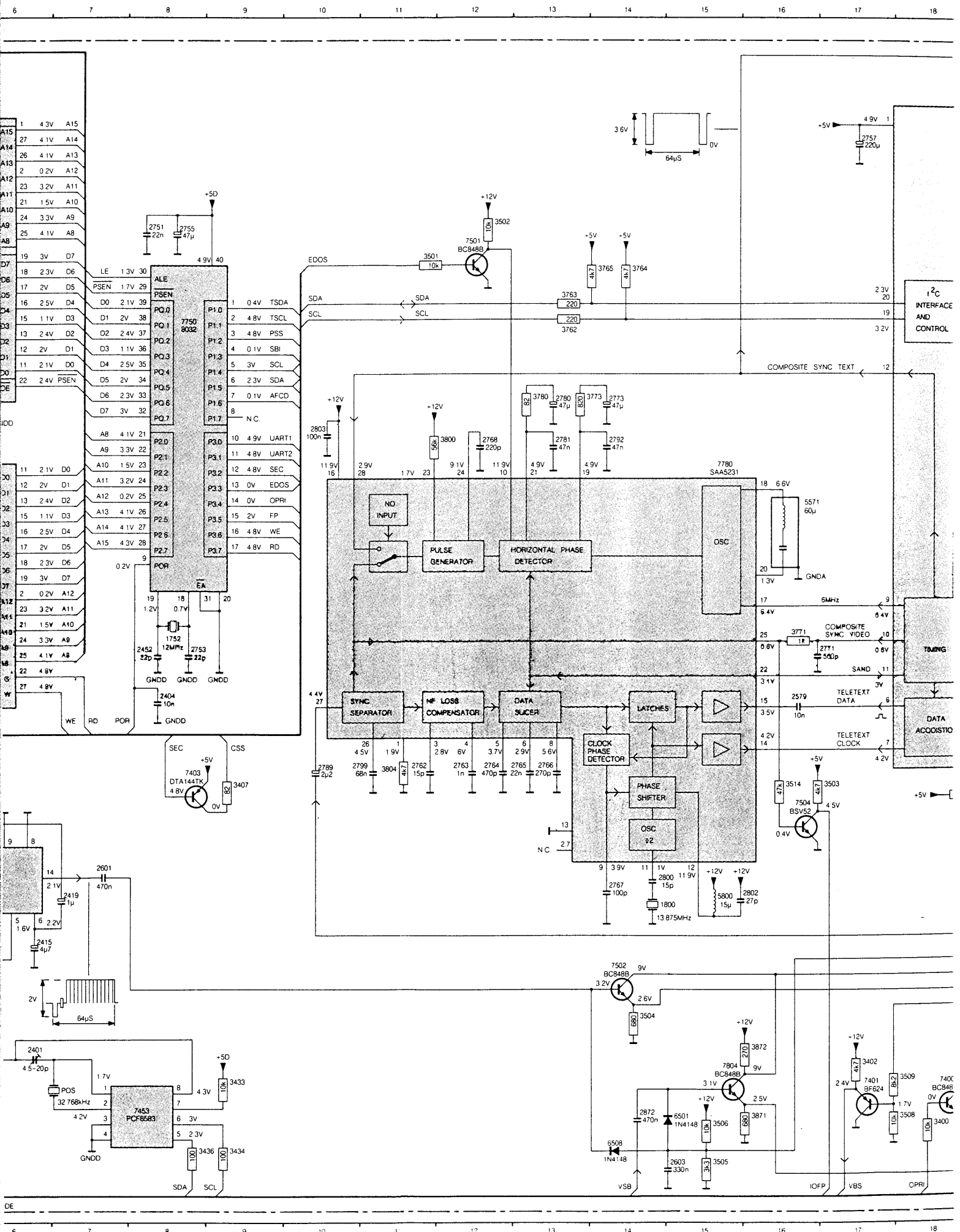
- Stem de videorecorder op een zender af via de antenne
- Sluit een oscilloscoop aan op pin 1 van 7785
- Regel de amplitude van het video signaal met 3406 af op $1.85 V_{tt}$

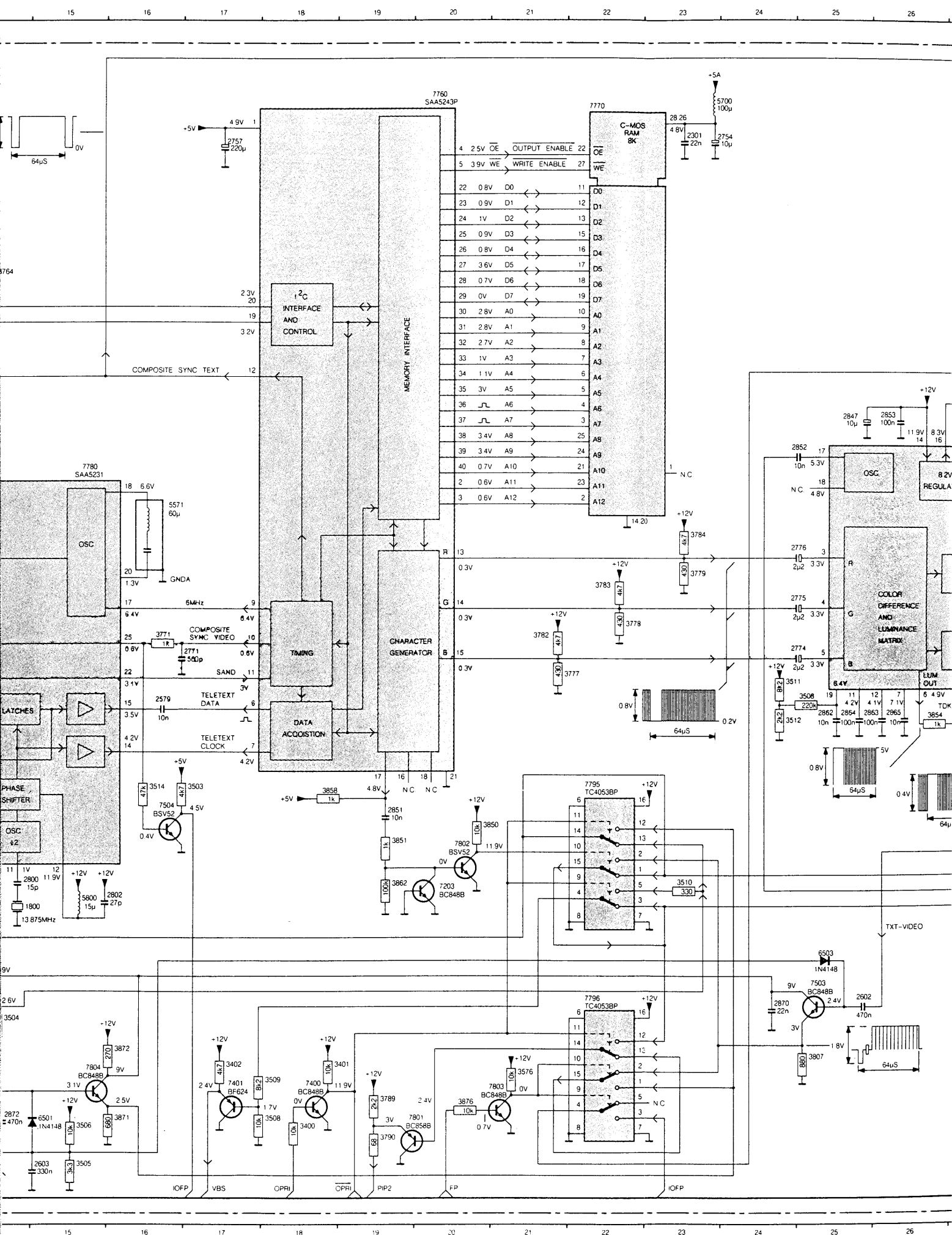
Regolazione dell'attività enzimatica

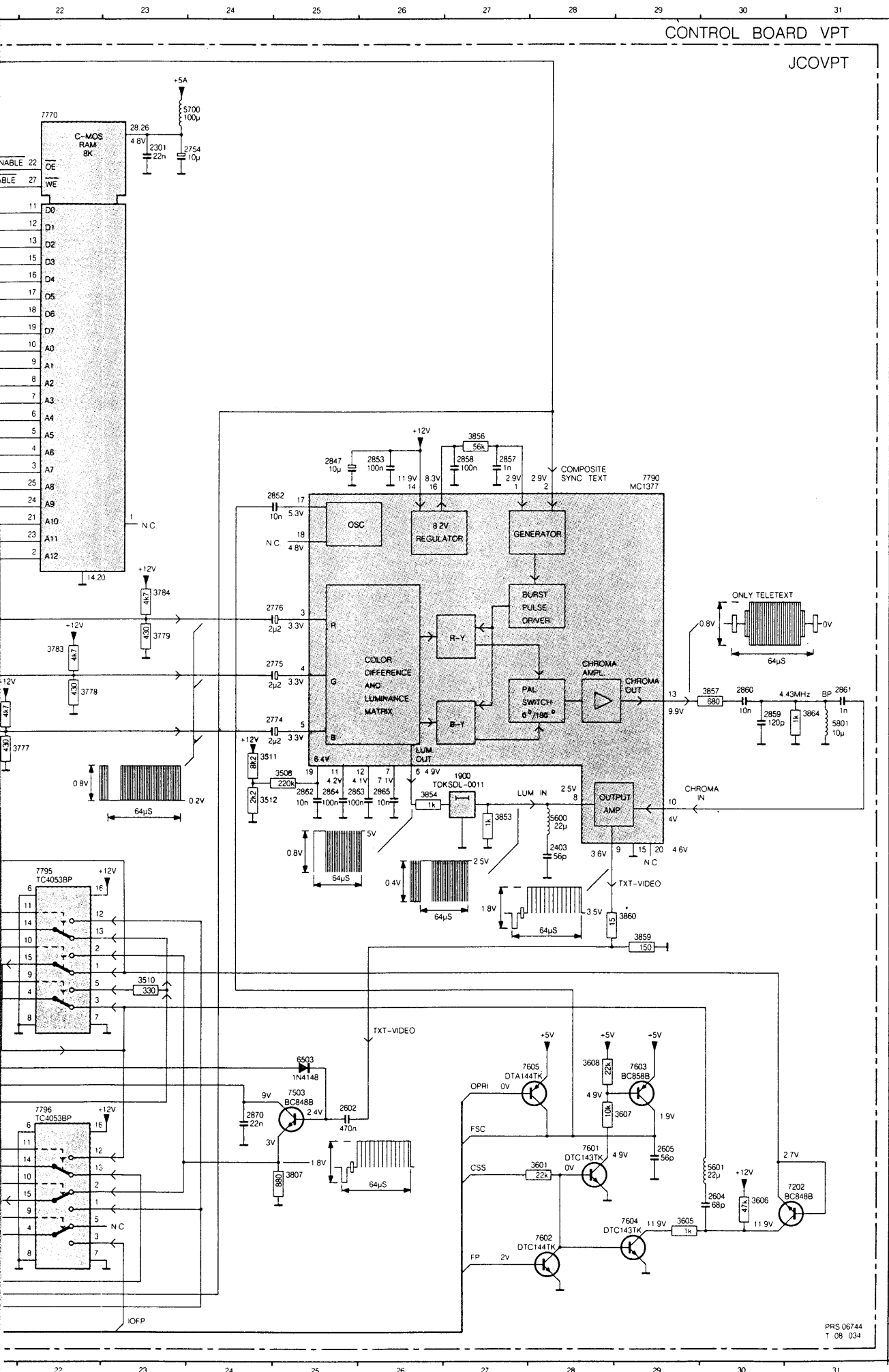
- Conecte el registrador via antena a una señal
- Conectar un oscilógrafo a pin 14 de IC7785
- Ajustar la señal video a 1,85 V_{ss} con 3406

- Collegare l'apparecchio via antenna ad un segnale
- Collegare un'oscillografo a pin 14 di IC7785
- Regolare il video segnale con 3406 a 1,85 V_{pp}

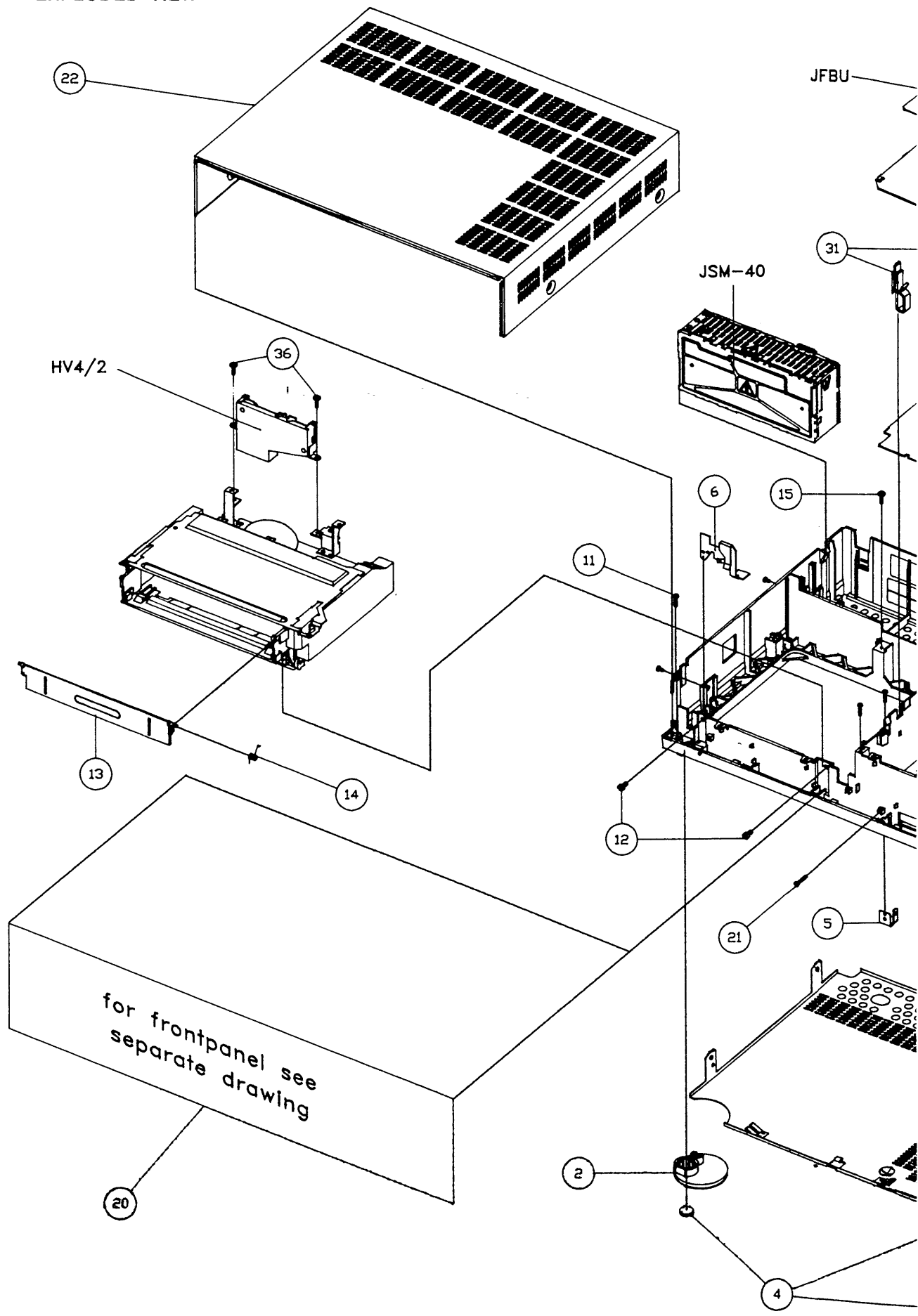


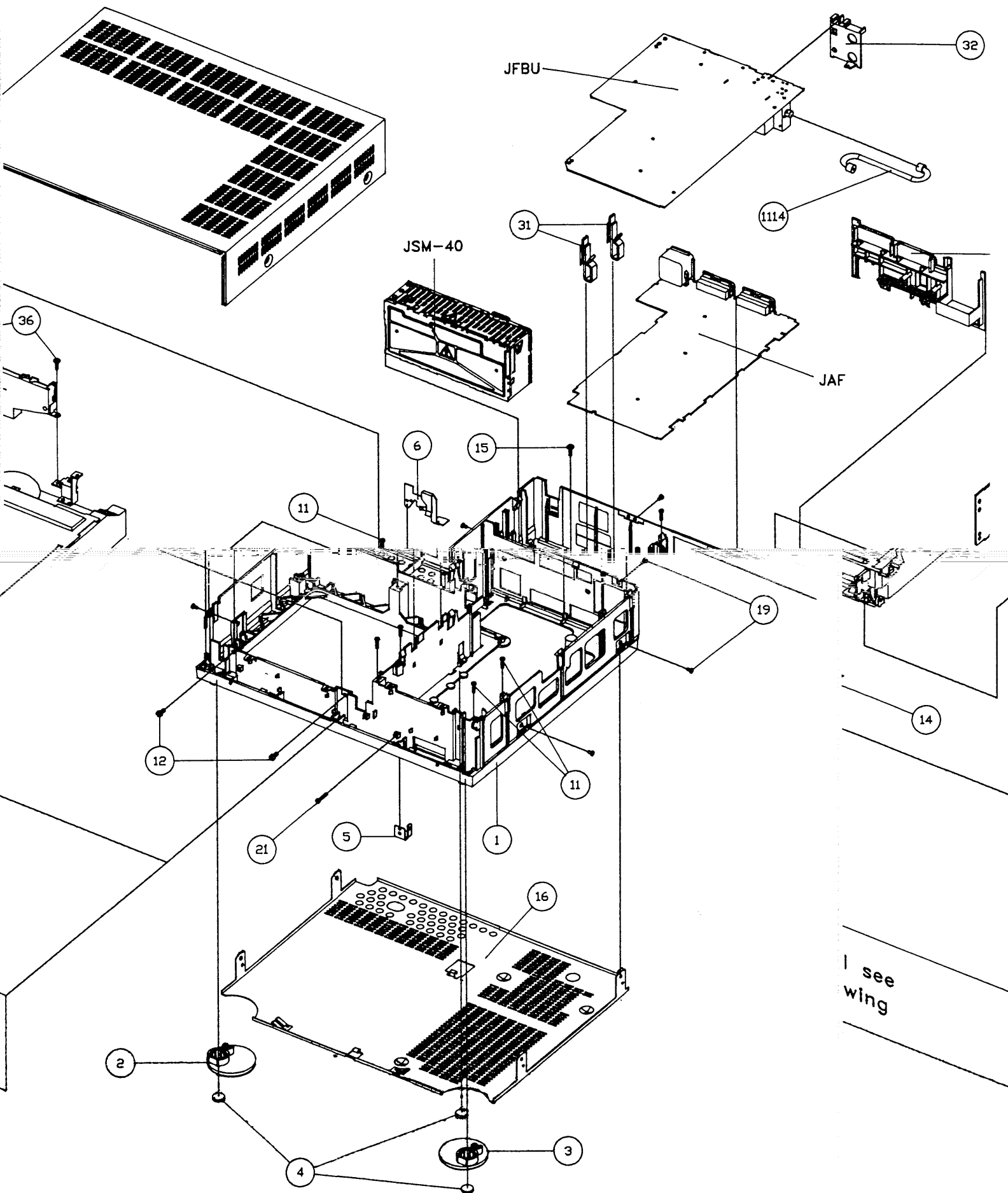




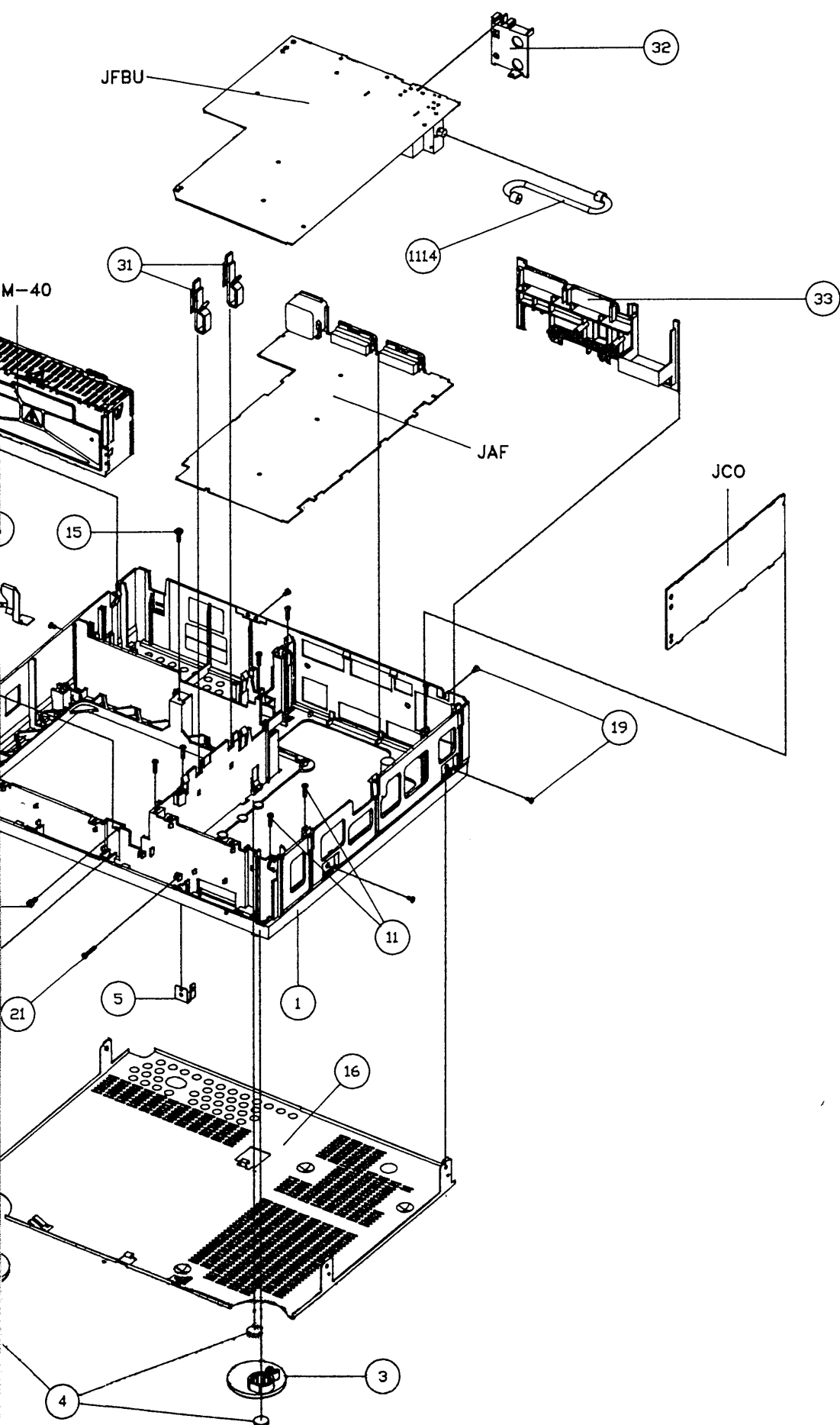


EXPLODED VIEW





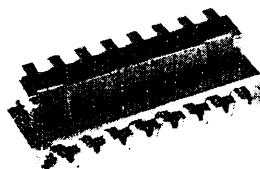
I see
wing



		Cabinet parts	Gehäuseteile	Pieces de presentation
1	4822 464 50812	Frame	Rahmen	Boîtier
2	4822 462 41736	Foot left	linker Fuss	Pied gauche
3	4822 462 41737	Foot right	rechter Fuss	Pied droit
4	4822 462 41289	Foot	Fuss	Pied
5	4822 403 70139	Bracket (for VR70x)	Klammer (für VR70x)	Support (pour VR70x)
6	4822 403 70141	Bracket (for VR70x)	Klammer (für VR70x)	Support (pour VR70x)
6	4822 402 61354	Bracket (for 7SB02)	Klammer (für 7SB02)	Support (pour 7SB02)
11	4822 502 11838	Screw	Schraube	Vis
12	4822 502 11697	Screw M4x8	Schraube M4x8	Vis M4x8
13	4822 443 63128	Lift flap (for VR702)	Liftklappe (für VR702)	Clapet (pour VR702)
13	4822 443 63149	Lift flap (for VR703)	Liftklappe (für VR703)	Clapet (pour VR703)
13	4822 443 63152	Lift flap (for 7SB02)	Liftklappe (für 7SB02)	Clapet (pour 7SB02)
13	4822 443 63158	Lift flap (for VR502)	Liftklappe (für VR502)	Clapet (pour VR502)
14	4822 492 52044	Spring	Feder	Ressort
15	4822 502 30546	Screw 4Nx3/4	Schraube 4Nx3/4	Vis 4Nx3/4
16	4822 443 51204	Bottom	Boden	Fond
19	4822 502 13173	Screw	Schraube	Vis
20	4822 443 40957	Control panel (for VR702)	Bedienungspanel (für VR702)	Panneau de commande (pour VR702)
20	4822 443 40963	Control panel (for VR703)	Bedienungspanel (für VR703)	Panneau de commande (pour VR703)
20	4822 443 40962	Control panel (for 7SB02)	Bedienungspanel (für 7SB02)	Panneau de commande (pour 7SB02)
20	4822 443 40965	Control panel (for VR502)	Bedienungspanel (für VR502)	Panneau de commande (pour VR502)
21	4822 502 13668	Screw	Schraube	Vis
22	4822 443 63141	Cover (for Vr70x)	Deckel (für VR70x)	Couvercle (pour VR70x)
22	4822 443 63159	Cover (for VR502)	Deckel (für VR502)	Couvercle (pour VR502)
31	4822 401 11377	Cable clamp	Kabelklammer	Fixation de cable
32	4822 443 63137	Cover	Deckel	Couvercle
32	4822 443 63171	Cover for /05	Deckel für /05	Couvercle pour /05
33	4822 402 61355	Support	Bolzen	Support
36	4822 502 30519	Screw	Schraube	Vis
150/1	4822 321 10457	Mains cord	Netzkabel	Cordon secteur
150/2	4822 321 23415	Antenna cable	Antennenkabel	Cable d'antenna
150/8	4822 321 22369	Cinch cable	Chinch Kabel	Cable Cinch
1114	4822 321 60916	Cable Tuner/Mod	Kabel Tuner/Mod	Cable Tuner/Mod

Stecker
Connector
Steker
fiche
spina
enchufe

3p	4822 267 40655
4p	4822 267 40672
5p	4822 267 40656
6p	4822 267 40657
7p	4822 267 50644
8p	4822 267 50645
9p	4822 267 50768
12p	4822 267 50646
13p	4822 267 50771



45 202 A11

Onderdelen apparaat Componentes muebla Parti del mobile

1	4822 464 50812
2	4822 462 41736
3	4822 462 41737
4	4822 462 41289
5	4822 403 70139
6	4822 403 70141
6	4822 402 61354
11	4822 502 11838
12	4822 502 11697
13	4822 443 63128

Frame
Voet links
Voet rechts
Voet
Beugel (voor VR70x)
Beugel (voor VR70x)
Beugel (voor 7SB02)
Schroef
Schroef M4x8
Liftklep (voor VR702)

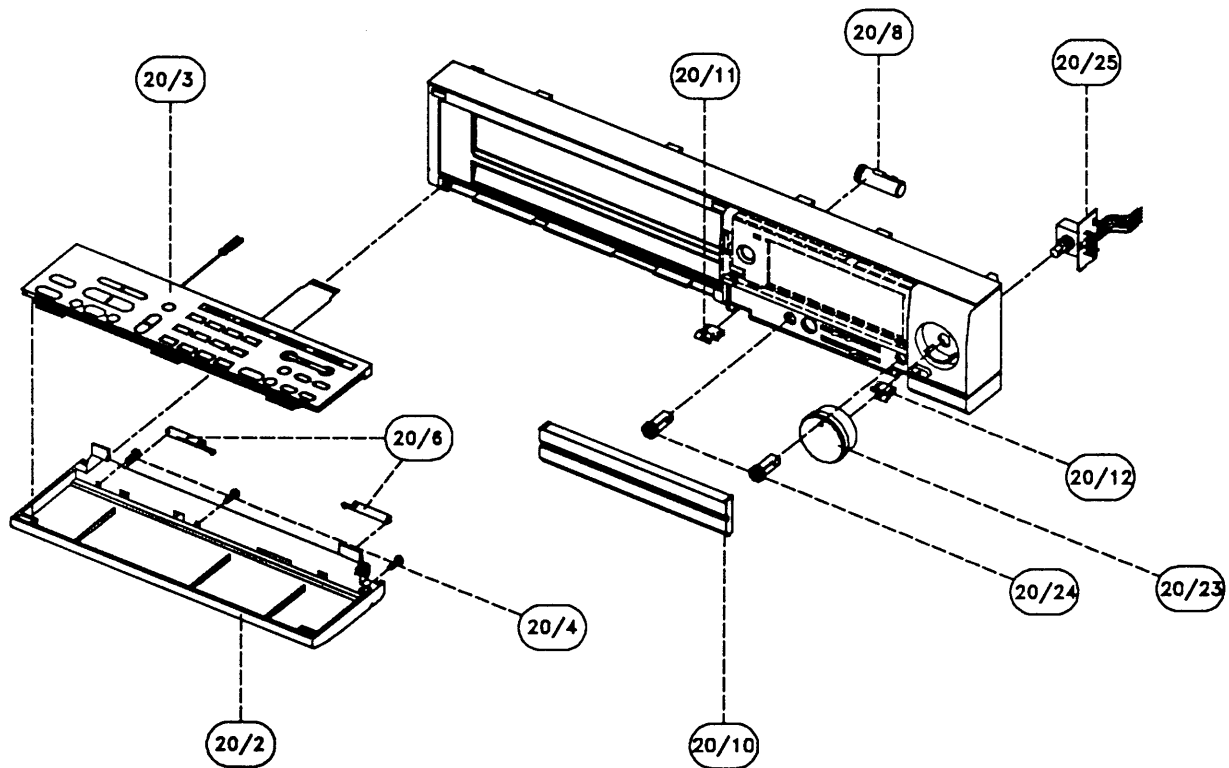
Bastidor
Pie izquierdo
Pie derecho
Pie
Abrazadera (para VR70x)
Abrazadera (para VR70x)
Abrazadera (para 7SB02)
Tornillo
Tornillo M4x8
Ventana (para VR702)

Mobile
Pedino sinistro
Pedino destro
Piede
Morsetto (per VR70x)
Morsetto (per VR70x)
Morsetto (per 7SB02)
Vite
Vite M4x8
Sportello (per VR702)

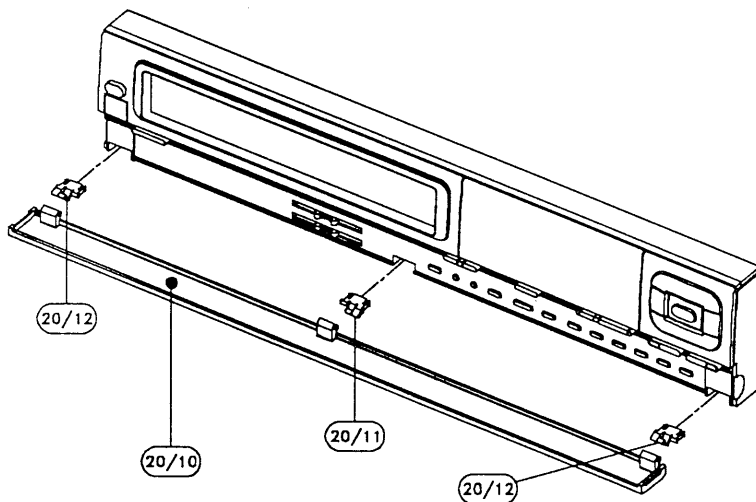
Sportello (per VR703)	13	4822 443 63149	Liftklep (voor VR703)	Ventana (para VR703)
Sportello (per 7SB02)	13	4822 443 63152	Liftklep (voor 7SB02)	Ventana (para 7SB02)
Sportello (per VR502)	13	4822 443 63158	Liftklep (voor VR502)	Ventana (para VR502)
Molla	14	4822 492 52044	Veer	Muelle
Vite 4Nx3/4	15	4822 502 30546	Schroef 4Nx3/4	Tornillo 4Nx3/4
Fondo	16	4822 443 51204	Bodem	Fondo
Vite	19	4822 502 13173	Schroef	Tornillo
Pannello di comandi (per VR702)	20	4822 443 40957	Bedienpaneel (voor VR702)	Panel de mandos (para VR702)
Pannello di comandi (per VR703)	20	4822 443 40963	Bedienpaneel (voor VR703)	Panel de mandos (para VR703)
Pannello di comandi (per VR502)	20	4822 443 40962	Bedienpaneel (voor VR502)	Panel de mandos (para VR502)
Pannello di comandi (per 7SB02)	20	4822 443 40965	Bedienpaneel (voor 7SB02)	Panel de mandos (para 7SB02)
Vite	21	4822 502 13668	Schroef	Tornillo
Coperchio (per VR70x)	22	4822 443 63141	Deksel (voor VR70x)	Tapa (para VR70x)
Coperchio (per VR502)	22	4822 443 63159	Deksel (voor VR502)	Tapa (para VR502)
Morsetto di cavo	31	4822 401 11377	Kabel klem	Abrazadera de Cable
Coperchio	32	4822 443 63137	Deksel	Tapa
Coperchio per /05	32	4822 443 63171	Deksel voor /05	Tapa para /05
Perno	33	4822 402 61355	Steun	Perno
Vite	36	4822 502 30519	Schroef	Tornillo
Cavo di rete	150/1	4822 321 10457	Netkabel	Cable de red
Cavo d'antenna	150/2	4822 321 23415	Antennekabel	Cable de Antena
Cavo cinch	150/8	4822 321 22369	Cinch kabel	Cable cinch
Cavo Tuner/Mod	1114	4822 321 60916	Kabel Tuner/Mod	Cable Tuner/Mod

For Service Manuals
MAURITRON SERVICES
 8 Cherry Tree Road, Chinnor
 Oxfordshire, OX9 4QY.
 Tel (01844) 351694
 Fax (01844) 352554
 email:- sales@mauratron.co.uk

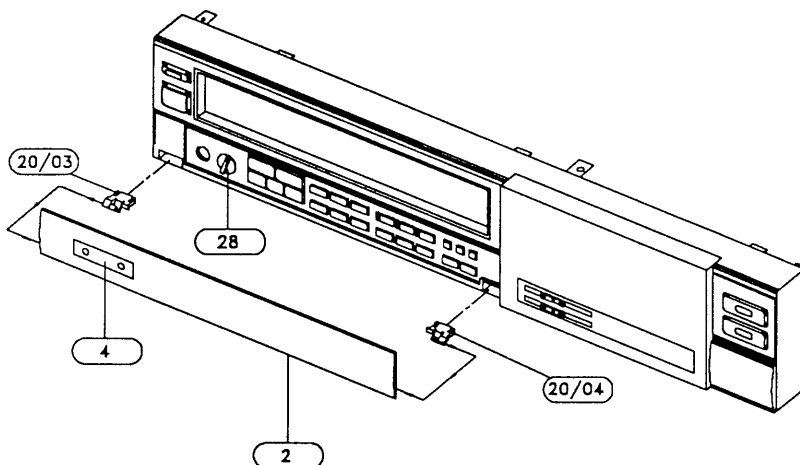
Front panel VR70x



Front panel VR502



Front panel 7SB02



Wordmark:

4	4822 459 10898	Aristona
4	4822 459 10895	Hornlyphon
4	4822 459 10907	Mediator
4	4822 459 10897	Phonola
4	4822 459 10896	Radiola
4	4822 459 10912	SBR
4	4822 459 10904	Siera

VR70x

20/2 4822 443 63142
 20/3 4822 466 92935
 20/4 4822 502 30386
 20/6 4822 500 10461
 20/8 4822 529 10264
 20/10 4822 443 63129
 20/11 4822 417 10844
 20/12 4822 417 10839
 20/23 4822 410 60893
 20/24 4822 413 31636
 20/25 4822 214 33018

Frontpanel

Flap
 Switchplate
 Screw
 Bolt
 Damper
 Flap
 Hingle left
 Hingle right
 RCS knob
 Potmeter knob
 Print+Potmeter

Gehäuseteile

Klappe
 Tastenblock
 Schraube
 Bolzen
 Dämpfer
 Klappe
 Scharnier links
 Scharnier rechts
 RCS Knopf
 Potmeter Knopf
 Print+Potmeter

Pieces de presentation

Clapet
 Clavier
 Vis
 Boulon
 Amortiseur
 Clapet
 Articulation gauche
 Articulation droite
 RCS Bouton
 Bouton potentiomètre
 Platine potentiomètre

Bedienpanel

20/2 4822 443 63142
 20/3 4822 466 92935
 20/4 4822 502 30386
 20/6 4822 500 10461
 20/8 4822 529 10264
 20/10 4822 443 63129
 20/11 4822 417 10844
 20/12 4822 417 10839
 20/23 4822 410 60893
 20/24 4822 413 31636
 20/25 4822 214 33018

Klep
 Toetsenpaneel
 Schroef
 Zeskantschroef
 Demper
 Klep
 Scharnier links
 Scharnier rechts
 RCS knop
 Potmeter knop
 Print+Potmeter

Panel de mandos

Ventana
 Teclado de mandos
 Tornillo
 Perno
 Amortiguador
 Ventana
 Bisagra izquierda
 Bisagra derecha
 Botón RCS
 Potenciómetro botón
 Print+Potenciómetro

Pannello di comandi

Sportello
 Tastiera dei comandi
 Vite
 Perno
 Ammortizzatore
 Sportello
 Cerniera sinistra
 Cerniera destra
 Bottone RCS
 Potenziometro bottone
 Print+Potenziometro

VR502

20/10 4822 443 63161
 20/11 4822 417 10844
 20/12 4822 417 10839

Frontpanel

Flap
 Hingle left
 Hingle right

Bedienungspanel

Klappe
 Scharnier links
 Scharnier rechts

Panneau de commande

Clapet
 Articulation gauche
 Articulation droite

Bedienpanel

20/10 4822 443 63161
 20/11 4822 417 10844
 20/12 4822 417 10839

Klep
 Scharnier links
 Scharnier rechts

Panel de mandos

Ventana
 Bisagra izquierda
 Bisagra derecha

Pannello di comandi

Sportello
 Cerniera sinistra
 Cerniera destra

7SB02

2 4822 443 63151
 20/3 4822 417 10844
 20/4 4822 417 10839
 28 4822 413 31571

Frontpanel

Flap
 Hinge left
 Hinge right
 Potmeter knob

Bedienungspanel

Klappe
 Scharnier links
 Scharnier rechts
 Potmeter Knopf

Panneau de commande

Clapet
 Articulation gauche
 Articulation droite
 Bouton potentiomètre

Bedienpanel

2 4822 443 63151
 20/3 4822 417 10844
 20/4 4822 417 10839
 28 4822 413 31571

Klep
 Scharnier links
 Scharnier rechts
 Potmeter knob

Panel de mandos

Ventana
 Bisagra izquierda
 Bisagra derecha
 Potenciómetro botón

Pannello di comandi

Sportello
 Cerniera sinistra
 Cerniera destra
 Potenziometro bottone

Tape Deck JED 4/2, JED 2/2

MECHANICAL PARTS

1(1)	4822 502 13241	SCREW	71(1)	4822 528 10718	REEL TABLE
77(1)	4822 502 13243	SCREW	72(1)	4822 691 20483	HOUSING UNIT
100(2)	4822 532 52054	CUT WASHER	76(1)	4822 502 13169	SCREW
101(2)	4822 492 32917	RELEASE SPRING	2(1)	4822 403 53724	MOUNTING ANGLE(L)
102(2)	4822 492 70085	LEVER SPRING	3(1)	4822 403 53565	MOUNTING ANGLE(R)
103(2)	4822 403 53604	MAIN LEVER(1)	5(1)	4822 466 82418	EARTH PLATE
104(2)	4822 403 53594	SUB LEVER	6(1)	4822 361 21381	SCANNERMOTOR JED 4/2
107(2)	4822 403 53843	SS-BRAKE UNIT	6(1)	4822 361 21379	SCANNERMOTOR JED 2/2
108(2)	4822 528 90697	TENSION ROLLER	7(1)	4822 691 20578	UPPER CYLINDER JED 4/2
109(2)	4822 403 53618	CAM FOLLOWER ARM	7(1)	4822 691 20604	UPPER CYLINDER JED 2/2
110(2)	4822 403 53581	DETENT ARM	11(1)	4822 403 53614	TENSION ARM
111(2)	4822 522 32518	MAIN CAM GEAR	12(1)	4822 492 32912	TENSION SPRING
112(2)	4822 522 32516	SUB CAMGEAR	13(1)	4822 401 11201	TENSION BAND
113(2)	4822 522 32519	CENTRE GEAR	14(1)	4822 528 10717	SUPPLY REEL
114(2)	4822 522 32526	RETAINER GEAR	15(1)	4822 532 52057	REEL WASHER (0,2MM)
115(2)	4822 522 32517	PLANET GEAR	15(1)	4822 532 52058	REEL WASHER (0,3MM)
116(2)	4822 522 32792	CLUTCH DISK UNIT	15(1)	4822 532 52055	REEL MASTER
119(2)	4822 522 52513	DRIVE DISK	16(1)	4822 403 53615	TENSION RELEASE ARM
120(2)	4822 522 32515	RING GEAR	17(1)	4822 249 20076	FULL ERASE HEAD
121(2)	4822 532 52052	CUT WASHER	18(1)	4822 403 53605	TENSION ARMBASE
122(2)	4822 403 53578	CHANGE LEVER	19(1)	4822 403 53562	MOUNTING ANGLE(L)
123(2)	4822 403 53599	RELEASE LEVER	20(1)	4822 532 52054	CUT WASHER
124(2)	4822 492 32909	RELEASE SPRING	21(1)	4822 403 53616	RELEASE ARM (B)
125(2)	4822 403 53579	RELEASE LEVER	22(1)	4822 492 32916	RELEASE SPRING
127(2)	4822 522 32532	REEL GEAR	23(1)	4822 271 30638	SAFETY SWITCH
128(2)	4822 522 32527	SUPPLY REEL GEAR	24(1)	4822 403 53622	MAIN BRAKE UNIT
129(2)	4822 403 53577	RETURN LEVER (R)	25(1)	4822 403 53621	SOFT BRAKE UNIT
130(2)	4822 403 53576	RETURN LEVER (L)	26(1)	4822 492 42296	SPRING
131(2)	4822 403 53572	STOPPER BASE	27(1)	4822 403 53623	MAIN BRAKE
132(2)	4822 358 30881	TIMING BELT	28(1)	4822 403 53619	TAKE UP BRAKE
133(2)	4822 691 20484	ROTOR UNIT *	29(1)	4822 492 42295	SPRING
134(2)	4822 403 53568	ROTOR STOPPER	30(1)	4822 403 53563	MOUNTING ANGLE(R)
135(2)	4822 691 20573	STATOR UNIT	31(1)	4822 502 13168	ADJUST SCREW
136(2)	4822 466 92285	SUB PLATE	32(1)	4822 492 52043	ADJUSTING SPRING
137(2)	4822 528 81246	CENTRE PULLEY	33(1)	4822 502 11834	AZIMUTH ADJUST SCREW
138(2)	4822 522 32524	LOADING GEAR (T)	34(1)	4822 249 10415	A/C HEAD UNIT
139(2)	4822 492 32923	LOADING SPRING (T)	35(1)	4822 505 10945	M4 NYLON NUT
0(2)	4822 403 53612	LOADING ARM (T)	36(1)	4822 505 10944	ADJUST NUT
1(2)	4822 522 32531	SECTOR GEAR	37(1)	4822 403 53601	HEAD BASE UNIT
142(2)	4822 522 32528	LOADING CAMGEAR	38(1)	4822 492 42297	A/C HEAD SPRING
143(2)	4822 522 32523	LOADING GEAR(S)	39(1)	4822 403 53842	SUB LOADING UNIT
144(2)	4822 403 53841	PLAY CONTROL ARM	40(1)	4822 492 32907	SUB POST SPRING
145(2)	4822 403 53611	LOADING ARM(S)	41(1)	4822 502 13171	THRUST SCREW
146(2)	4822 522 32514	INTERMEDIATE GEAR	42(1)	4822 502 13167	HOUSING SCREW
147(2)	4822 403 53841	CONTROL ARM	43(1)	4822 532 52053	OIL SEAL
148(2)	4822 249 20075	FG HEAD *	44(1)	4822 403 53596	PINCH CAM CAP
149(2)	4822 492 32918	LOADING SPRING	45(1)	4822 528 81245	PRESSURE ROLLER UNIT
150(2)	4822 502 13244	SPACER SCREW	46(1)	4822 492 32914	PRESSURE SPRING
151(2)	4822 505 10957	STOPPER NUT	47(1)	4822 403 53582	PINCH PRESSURE ARM
201(3)	4822 443 30737	TOP PLATE	48(1)	4822 492 32915	RELEASE SPRING
202(3)	4822 256 91536	CASSETTE HOLDER	49(1)	4822 403 53583	PINCHLIFTARM
216(3)	4822 443 40718	SIDE PLATE (L)	50(1)	4822 522 32522	P5 SECTORGear
217(3)	4822 443 40716	SIDE PLATE (L)	51(1)	4822 522 32525	PINCH CAM
219(3)	4822 443 40817	SIDE PLATE UNIT	52(1)	4822 505 10737	M3 NYLON NUT
221(3)	4822 214 32975	SLIDE SWITCH UNIT	53(1)	4822 403 53609	P5 UNIT VXL1485
229(3)	4822 535 92528	MAIN SHAFT	54(1)	4822 492 70088	P5 SPRING
230(3)	4822 492 42298	WIPER SPRING (L)	55(1)	4822 276 12496	MODE SWITCH
231(3)	4822 403 53584	WIPER ARM (L)	57(1)	4822 403 70013	INCLINED BASE (S)
232(3)	4822 403 53585	WIPER ARM (R)	60(1)	4822 403 53571	POST STOPPER
233(3)	4822 492 42306	WIPER SPRING (R)	62(1)	4822 403 53731	INCLINED BASE (T)
234(3)	4822 403 53626	CASSETTE GUIDE	64(1)	4822 522 32529	PINCHDOWNGEAR
236(3)	4822 492 42305	BLINDER SPRING	65(1)	4822 522 32512	CONNECTION GEAR
240(3)	4822 403 53627	CASSETTE HOLDER	66(1)	4822 526 20151	SOLENOID UNIT
		ANGLE	67(1)	4822 403 53603	KICK ROD UNIT
			68(1)	4822 403 53569	SOLENOIDLEVER
			69(1)	4822 492 32908	KICK ROD SPRING
			70(1)	4822 492 32913	MAIN BRAKESPRING

Tape Deck JED 4/2, JED 2/2

SCREWS

S1	4822 502 13217
S2	4822 502 11283
S3	4822 502 30531
S5	4822 502 30553
S6	4822 502 30551
S7	4822 502 30556
S8	4822 502 30557
S9	4822 502 11968
S10	4822 502 30559
S11	4822 502 30558
S12	4822 502 30554
S14	4822 502 30562
S15	4822 502 30561
S16	4822 502 13219
S17	4822 502 13218

RETAINING RINGS

R1	5322 530 74076
R2	4822 530 70122

WASHERS

W1	5322 530 74076
W3	4822 532 11705

PRINTED BOARDS

4822 214 32533	MECHANISM
4822 256 91574	CONNECTION CBA
4822 214 32532	LED-HOLDER UNIT
4822 214 32975	PHOTO TRANSISTOR (S)
	PHOTO TRANSISTOR (T)

*** Instelling van de FG kop**

Instellen, zoals in de service manual van het loopwerk is beschreven, echter de uitgangsspanning moet $>70\text{mVt}$ - $<180\text{mVt}$ bedragen.

*** Adjustment of the FG-head**

Adjust the FG-head as described in the service manual of the mechanism, however the output voltage of the FG-head must be $>70\text{mVt}$ - $<180\text{mVt}$.

*** Einstellung des FG-Kopfs**

Einstellung wie in Laufwerksdokumentation aber die Ausgangsspannung des FG-Kopfes muss $>70\text{mVss}$ - $<180\text{Vss}$ sein.

*** Ajustage de la tête FG**

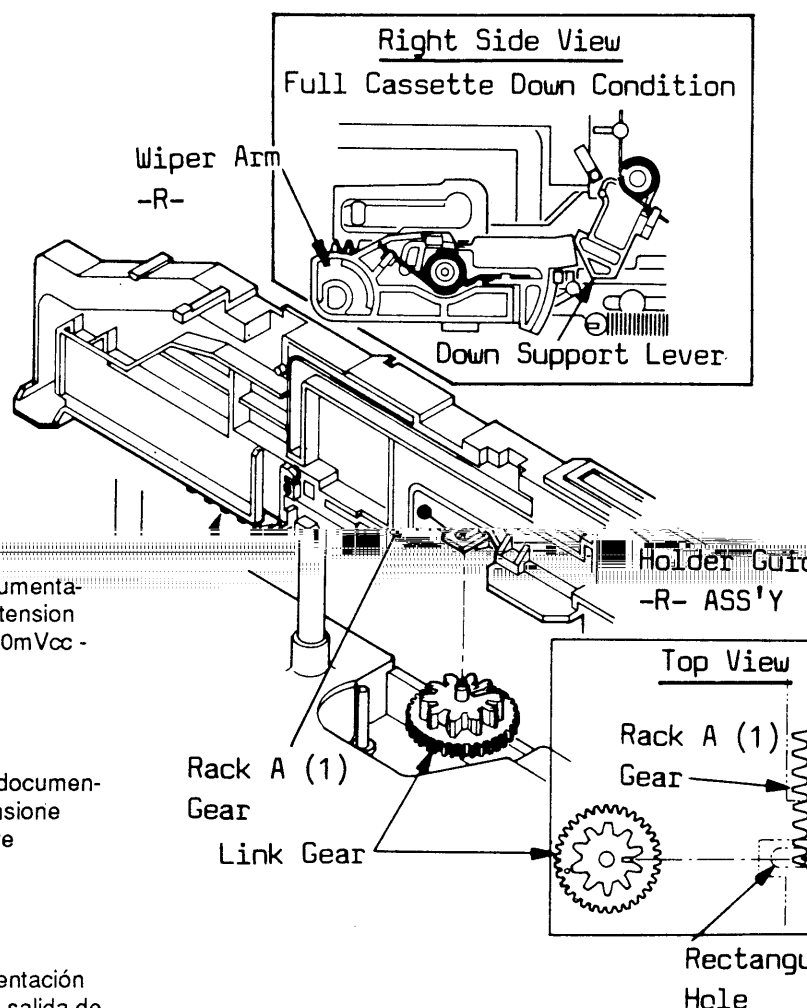
Ajustage comme écrit dans la documentation de la mécanique. Pourtant la tension de sortie de la tête FG doit être $>70\text{mVcc}$ - $<180\text{mVcc}$.

*** Regolazione della testina FG**

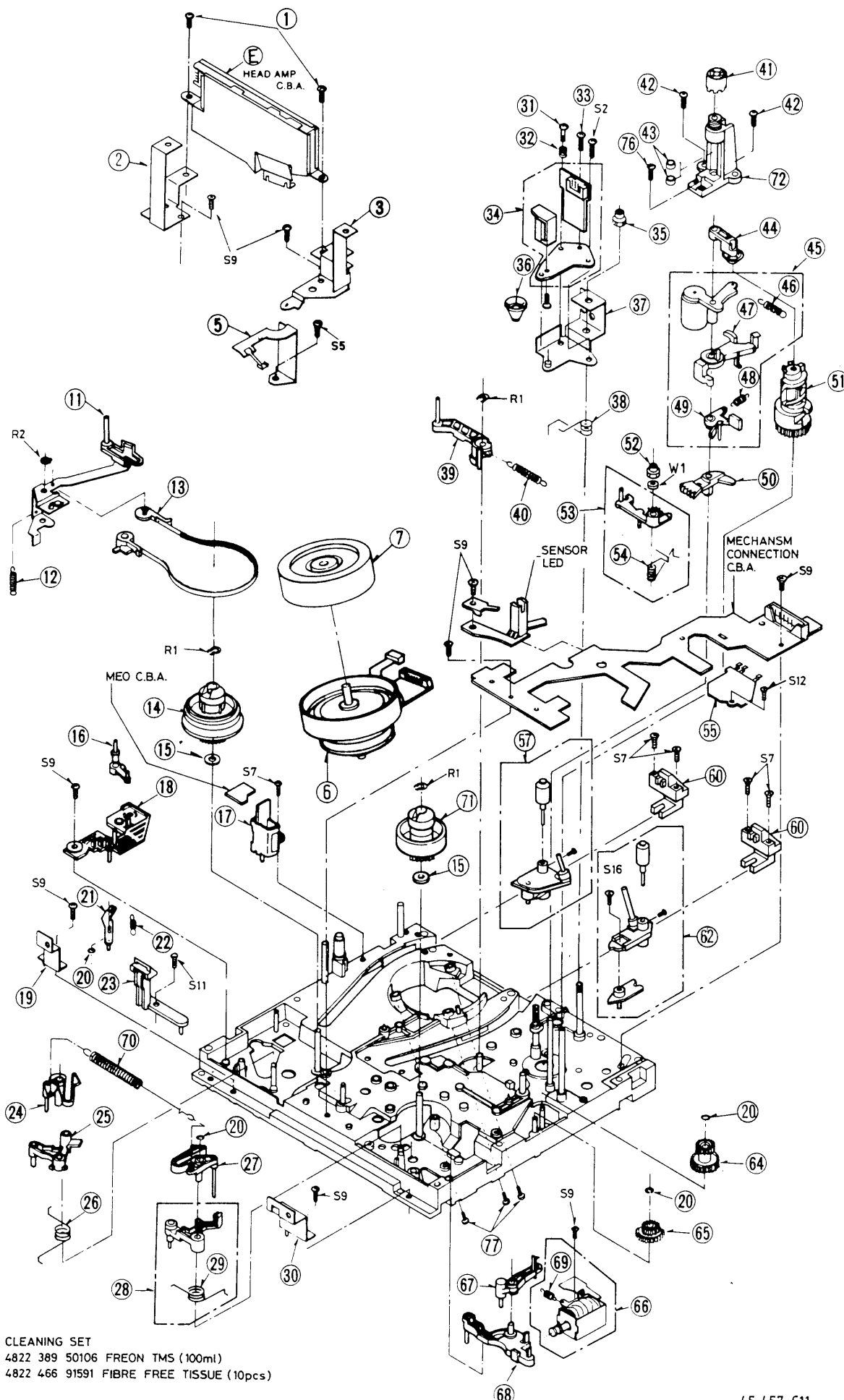
Regolazione come descritta nella documentazione della meccanica, ma la tensione d'uscita della testina FG dev'essere $>70\text{mVpp}$ - $<180\text{mVpp}$.

*** Ajuste de la cabeza FG**

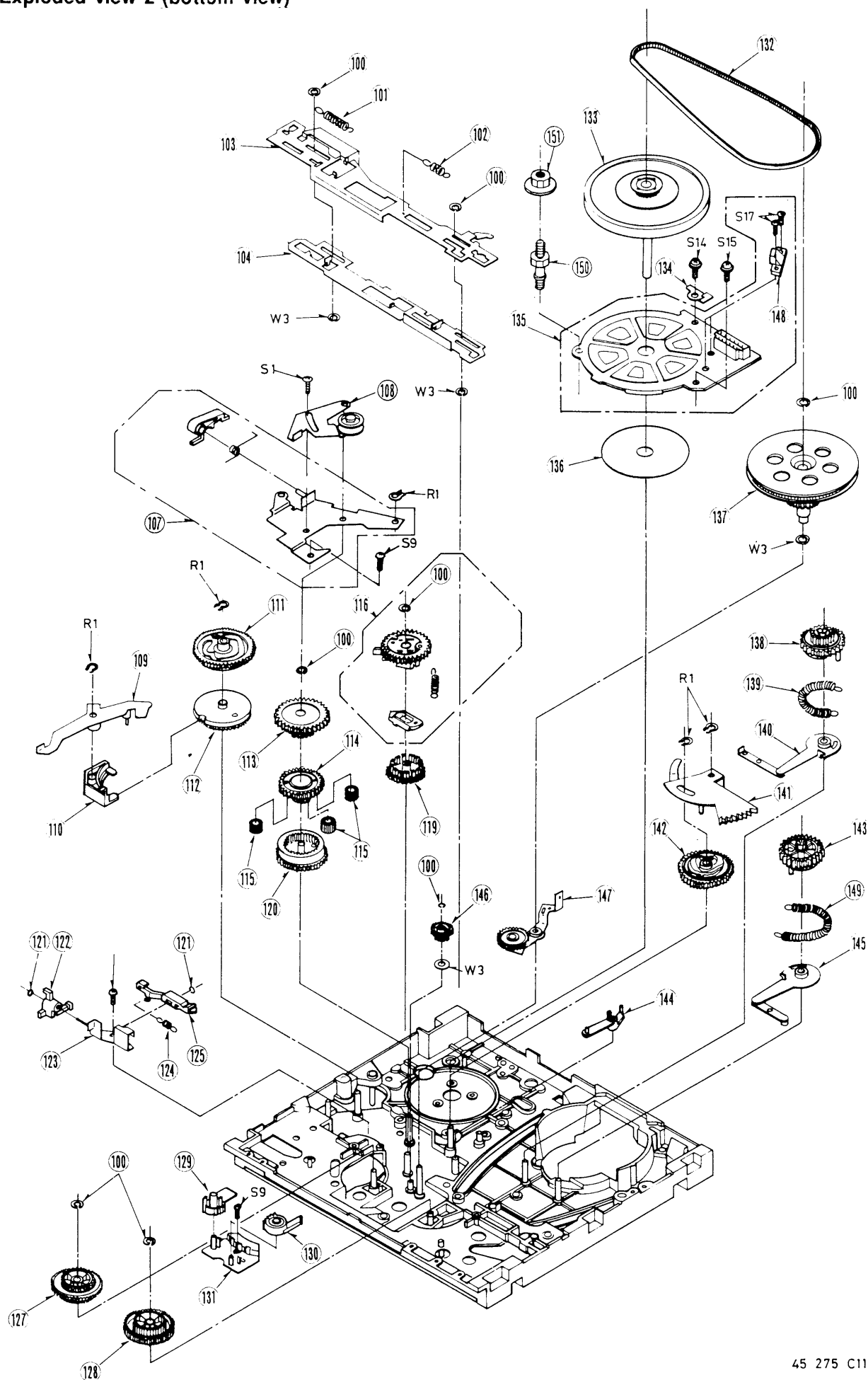
Ajuste como descrito en la documentación de la mecánica, pero la tensión de salida de la cabeza FG tiene que ser $>70\text{mVss}$ - $<180\text{mVss}$.



Exploded view 1 (top view)

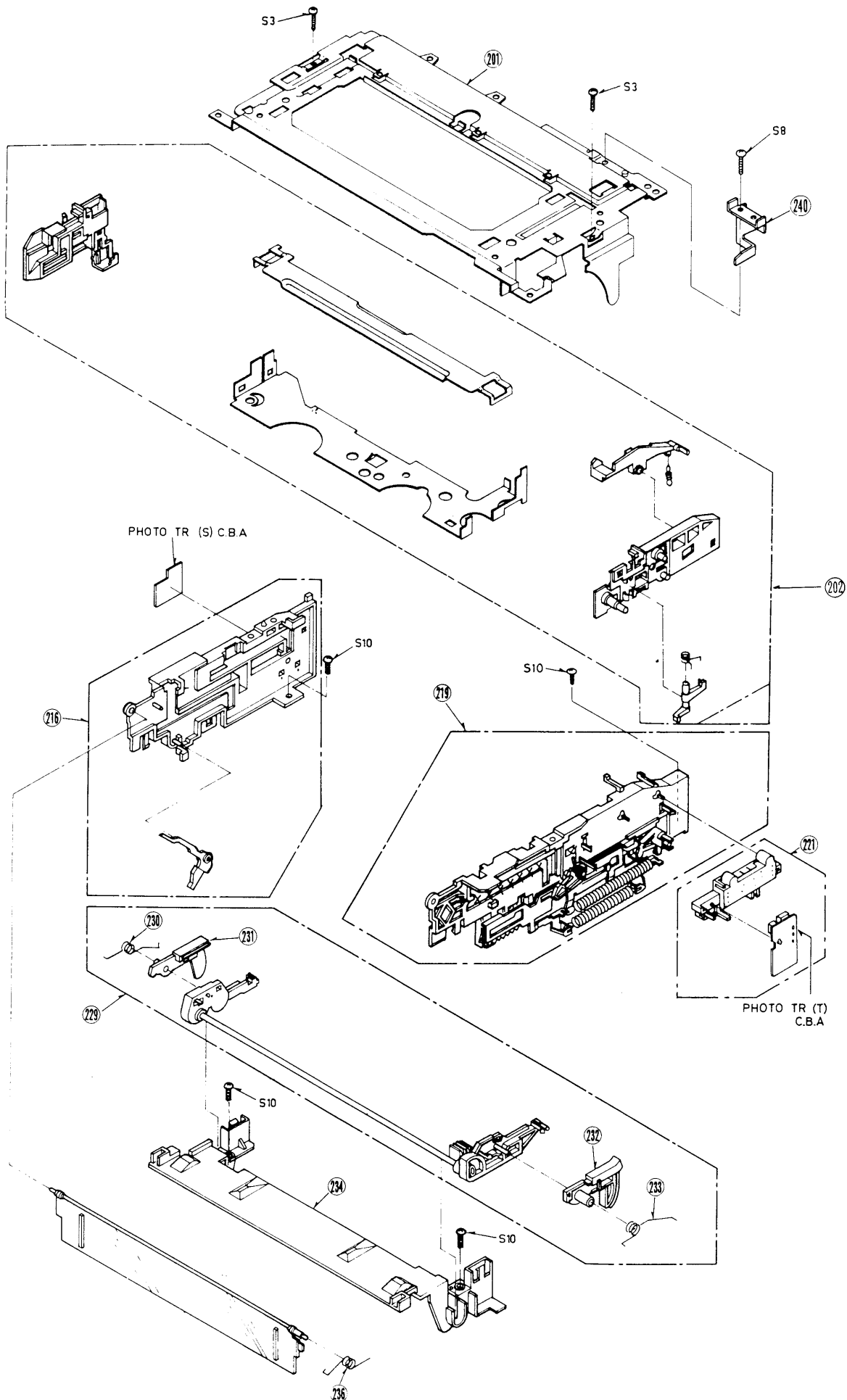


Exploded view 2 (bottom view)



45 275 C11

Exploded view 3 (cassette compartment)



Power supply JSM-40

MISCELLANEOUS

5322 390 20011	SILICONE GREASE
4822 265 30739	CONNECTOR 6 PIN
3997	SPRING
1839	SCREW
0219	MAINS CONNECTOR
1689	ISOLATION PLATE

0232	FUSE 2,0A 250V
3151	FUSE 315MA
8009	FUSE 80MA

4372	220 nF	250V
3441	1 nF	125V
3076	470 pF	400V
3076	470 pF	400V
4151	100 nF	250V
1556	100 µF	385V
3441	1 nF	125V
3849	150 pF	50V
3849	150 pF	50V
2661	330 nF	
3075	680 pF	1000V
2198	68 nF	63V
0739	680 µF	25V
0739	680 µF	25V
0739	680 µF	25V
2426	100 µF	16V
2426	100 µF	16V
1069	47 µF	63V
2408	220 nF	63V
2408	220 nF	63V
1297	39 nF	63V
1248	27 nF	63V
1776	330 nF	63V
2686	15 nF	63V
0199	680 µF	16V
0199	680 µF	16V

1395	3.9 MΩ
1395	3.9 MΩ
2224	470 Ω
2196	2.2 MΩ
0338	3.3 Ω
0684	680 kΩ
2264	27 kΩ
0175	4.7 kΩ
2238	12 kΩ
0334	330 kΩ
2224	470 Ω
2175	100 Ω
2213	180 Ω
2191	33 Ω
2219	330 Ω
2182	15 Ω
2182	15 Ω
2289	5.6 kΩ
0175	4.7 kΩ
2197	56 Ω

**SILICONE GREASE
CONNECTOR 6 PIN**

3246	4822 116 52211	150 Ω
3247	4822 116 52217	270 Ω
3248	4822 116 52217	270 Ω
3250	4822 116 52204	1 kΩ
3251	4822 116 52204	1 kΩ
3254	4822 116 52249	22 kΩ
3255	4822 050 11002	1 kΩ
3257	4822 050 12433	24.3 kΩ
3258	4822 050 11332	1.33 kΩ

COILS

5103	4822 157 53348
5114	4822 146 30881
5131	4822 157 53549
5134	4822 157 62551
5201	4822 157 53006
5207	4822 157 53006
5208	4822 157 53006
5215	4822 157 53006
5230	4822 157 53352
5263	4822 157 53528
5264	4822 157 53528

DIODES

6110	4822 130 80858	1N5062GP (GI)
6111	4822 130 80858	1N5062GP (GI)
6112	4822 130 80858	1N5062GP (GI)
6113	4822 130 80858	1N5062GP (GI)
6120	4822 130 80858	1N5062GP (GI)
6123	4822 130 30621	1N4148
6124	4822 130 30621	1N4148
6127	4822 130 31456	BZV85-C5V1
6129	4822 130 30621	1N4148
6136	4822 130 34193	BAX14
6137	4822 130 30621	1N4148
6138	4822 130 30621	1N4148
6207	4822 130 81516	MUR410 (MTLA)
6208	4822 130 81516	MUR410 (MTLA)
6215	4822 130 81272	MUR115 (MTLA)
6216	4822 130 30613	BAW62
6230	4822 130 81272	MUR115 (MTLA)
6235	4822 130 30621	1N4148
6236	4822 130 30621	1N4148
6237	4822 130 30621	1N4148
6241	4822 130 61219	BZX79-10V
6251	4822 130 30621	1N4148
6252	4822 130 30621	1N4148
6253	4822 130 34441	BZX79-B22
6260	4822 130 32715	SB340

TRANSISTORS & IC's

7121	4822 130 44196	BC548C
7124	4822 130 82034	CNX83A
7125	5322 130 60068	BC558C
7126	5322 130 44349	BC635
7135	4822 130 42679	BUT11AF
7243	4822 130 44568	BC557B
7246	4822 130 44503	BC547C
7253	4822 209 81397	TL431CLP (MOTA)

3238	4822 116 52207	1.2 kΩ
3240	4822 050 15601	560 Ω
3242	4822 050 18661	866 Ω
3243	4822 116 52175	100 Ω

FUSES

1101	4822 253 3
1216	4822 071 5
1228	4822 071 5

CAPACITORS

2101	5322 121 4
2103	4822 122 3
2105	4822 122 3
2107	4822 122 3
2108	5322 122 3
2112	4822 124 4
2113	4822 122 3
2121	4822 122 3
2124	4822 122 3
2127	5322 121 4
2135	4822 122 3
2136	4822 121 4
2207	4822 124 4
2208	4822 124 4
2210	4822 124 4
2211	4822 124 2
2212	4822 124 2
2217	4822 124 4
2221	4822 121 4
2222	4822 121 4
2236	4822 121 5
2238	4822 121 5
2244	4822 121 4
2254	4822 121 4
2260	4822 124 4
2261	4822 124 4

RESISTORS

3102	4822 053 2
3103	4822 053 2
3104	4822 116 5
3106	4822 110 4
3109	4822 053 3
3112	4822 053 2
3120	4822 116 5
3121	4822 116 8
3123	4822 116 5
3124	4822 053 2
3125	4822 116 5
3126	4822 116 5
3127	4822 116 5
3131	4822 116 5
3134	4822 116 5
3140	4822 116 5
3141	4822 116 5
3217	4822 116 5
3230	4822 116 8
3236	4822 116 5

Family board JFBU

CONNECTORS

0004	4822 265 30732	SOCKET 6-FOLD
0005	4822 267 50621	SOCKET 7-FOLD
0006	4822 265 41079	SOCKET
0007	4822 267 40697	SOCKET 6-FOLD
0008	4822 267 50723	SOCKET 13-FOLD
0009	4822 267 40624	SOCKET 5-FOLD
0010	4822 290 81377	L-CONTACTSTRIP
0012	4822 267 50722	SOCKET 10-FOLD
0013	4822 267 50721	SOCKET 9-FOLD
0014	4822 265 40722	SOCKET 11-FOLD
0015	4822 267 50996	CON SKT 13P
0016	4822 267 40919	CON SKT 4P
0017	4822 267 40697	SOCKET 6-FOLD
0018	4822 265 40475	SOCKET 8-FOLD
0019	4822 267 50721	SOCKET 9-FOLD
0020	4822 267 40696	SOCKET 3-FOLD
0022	4822 267 50723	SOCKET 13-FOLD
0023	4822 265 40902	SOCKET 15-FOLD

MISCELLANEOUS

0024	4822 466 82736	COOLING PLATE
0026	4822 502 11064	SCREW
0034	5322 390 20011	SILICON-GREASE DC 4
1002	4822 071 53151	FUSE 315MA
1101	4822 242 72413	QUARZ 4,433619MHZ
1300	4822 242 72913	QUARZ 12MHZ
1301	4822 071 58001	FUSE 800MA
1500	4822 214 32981	RF-MODULATOR PAL-BG
1500	4822 214 33127	RF-MODULATOR PAL-I
1501	4822 157 60192	GROUP DELAY
1701	4822 210 10392	TUNER UV916E
1701	4822 210 10393	TUNER U944 (only for PALI)
1702	4822 242 73842	SAW FILTER 0FWG1963 (only for PAL, SECAM B/G)
1702	4822 242 72095	SAW FILTER TSF5316
1702	4822 242 72576	SAW FILTER TSF5309 (only for PALI)
1740	4822 242 72086	CER.FILTER TPS5,5MB
1740	4822 242 72578	CER.FILTER TPS6,0MB (only for PALI)

CAPACITORS

2001	4822 122 31797	22 nF
2002	4822 122 31961	68 pF
2003	4822 124 41516	47 µF 16V
2004	4822 122 32542	47 µF (not for LP)
2005	4822 122 31972	39 pF
2006	4822 122 32442	10 nF
2007	4822 124 22429	1 µF 50V
2008	4822 122 31772	47 pF
2009	4822 122 31965	220 pF
2010	4822 122 32765	820 pF
2011	4822 122 31768	180 pF
2012	4822 122 32444	33 pF
2013	4822 122 31839	82 pF
2014	4822 122 10166	22 nF 16V
2015	5322 121 42661	330 nF 50V
2022	4822 122 31774	56 pF
2023	4822 122 32442	10 nF
2024	4822 124 22429	1 µF 50V
2025	4822 124 41516	47 µF 16V
2026	4822 122 31766	120 pF
2027	4822 122 31769	18 pF

2028	4822 122 31769	18 pF
2029	4822 122 32597	6.8 nF
2030	4822 122 32442	10 nF
2031	4822 122 31797	22 nF
2032	4822 122 32442	10 nF
2033	4822 122 32442	10 nF
2034	4822 122 32442	10 nF
2035	4822 122 32082	4.7 pF
2036	4822 122 31765	100 pF
2037	4822 122 32597	6.8 nF
2038	4822 122 31965	220 pF
2039	4822 122 31727	470 pF
2040	4822 122 32542	47 nF
2041	4822 124 41521	10 µF 25V
2042	4822 124 41588	4.7 µF (not for LP)
2043	4822 124 41521	10 µF 25V
2044	4822 124 42097	22 µF 16V
2045	4822 124 42097	22 µF 16V
2046	4822 122 32597	6.8 nF
2047	4822 122 31797	22 nF
2048	4822 124 41516	47 µF 16V
2049	4822 122 32893	100 nF 50V
2050	4822 124 41516	47 µF 16V
2051	4822 122 32893	100 nF 50V
2052	4822 122 32442	10 nF
2053	4822 124 41521	10 µF 25V
2055	4822 122 31839	82 pF
2056	4822 122 31772	47 pF
2057	4822 122 32893	100 nF 50V
2058	4822 124 42097	22 µF 16V
2059	4822 122 32893	100 nF 50V
2060	4822 122 31797	22 nF
2061	4822 122 31825	27 pF
2063	4822 122 31773	560 pF
2064	4822 122 31774	56 pF
2065	4822 122 32893	100 nF 50V
2066	4822 122 31972	39 pF
2067	4822 122 32442	10 nF
2068	4822 122 31772	47 pF
2069	4822 122 32442	10 nF
2070	4822 122 32893	100 nF 50V
2071	4822 122 32504	15 pF
2072	4822 122 31768	180 pF
2073	4822 122 31839	82 pF
2074	4822 122 31765	100 pF
2101	4822 122 32765	820 pF
2102	4822 122 32442	10 nF (not for LP)
2103	4822 122 10166	22 nF 16V
2104	5322 122 31647	1 nF
2105	5322 122 31647	1 nF
2106	4822 122 32597	6.8 nF
2107	4822 122 31965	220 pF
2108	4822 122 31972	39 pF
2109	4822 122 31972	39 pF
2110	4822 122 31765	100 pF
2111	4822 124 22426	100 µF 16V
2112	4822 122 32442	10 nF
2113	4822 122 32566	3.9 nF
2114	4822 122 32542	47 nF
2114	4822 122 31797	22 nF (not for LP)
2115	4822 121 42868	220 nF 50V
2116	4822 121 42868	220 nF 50V
2117	4822 122 31765	100 pF
2118	5322 122 31647	1 nF (only for PAL/SECAM/B/G)
2119	4822 124 41588	4.7 µF 25V
2120	4822 122 32566	3 nF

Family board JFBU

2121	4822 124 22429	1 μ F	50V	2319	5322 122 33446	3.3 nF	
2122	4822 124 22425	2.2 μ F	50V	2320	4822 122 32542	47 nF	
2123	4822 122 32597	6.8 nF		2321	5322 122 33446	3.3 nF	
2124	5322 122 31647	1 nF		2322	4822 122 32542	47 nF	
2125	5322 122 31647	1 nF		2323	5322 122 33446	3.3 nF	
2126	5322 122 31647	1 nF		2324	4822 122 32542	47 nF	
2127	4822 124 22426	100 μ F	16V	2325	4822 124 22425	2.2 μ F	50V
		(only for PAL/SECAM/B/G)		2326	4822 122 32442	10 nF	
2128	4822 124 22429	1 μ F	50V	2327	4822 122 31797	22 nF	
2129	4822 124 22429	1 μ F	50V	2328	4822 121 42408	220 nF	63V
2130	4822 122 32442	10 nF		2329	4822 122 32442	10 nF	
2131	4822 122 31825	27 pF		2330	4822 122 32442	10 nF	
2132	4822 122 31765	100 pF		2331	4822 122 32893	100 nF	5V
2133	4822 122 32893	100 nF	50V	2332	4822 122 32893	100 nF	5V
2134	4822 122 31825	27 pF		2333	4822 124 42006	1 μ F	BIP 50V
2135	4822 122 32893	100 nF	50V	2334	4822 124 42006	1 μ F	BIP 50V
2136	4822 124 41516	47 μ F	16V	2335	4822 124 42006	1 μ F	BIP 50V
2137	4822 122 31965	220 pF		2336	4822 122 31765	100 pF	
2138	5322 122 31842	330 pF		2337	4822 122 32893	100 nF	50V
2139	5322 122 31647	1 nF		2339	4822 122 32442	10 nF	
2140	4822 124 22425	2.2 μ F	50V	2340	4822 122 32566	3.9 nF	
		(only for PAL/SECAM/B/G)		2341	4822 122 32442	10 nF	
2141	4822 124 22425	2.2 μ F	50V	2342	4822 122 32482	22 pF	
		(only for PAL/SECAM/B/G)		2343	4822 122 32482	22 pF	
2142	5322 122 31647	1 nF		2344	4822 122 32893	100 nF	50V
		(only for PAL/SECAM/B/G)		2345	4822 124 22426	100 μ F	16V
2143	4822 124 41588	4.7 μ F	25V	2346	4822 124 22426	100 μ F	16V
		(only for PAL/SECAM/B/G)		2347	5322 121 42491	47 nF	50V
2144	4822 122 32442	10 nF		2348	4822 122 10166	22 nF	16V
2145	4822 122 32442	10 nF		2349	4822 124 41516	47 μ F	16V
2201	4822 122 32442	10 nF (only for LP)		2350	4822 122 32893	100 nF	50V
2202	4822 122 32442	10 nF (only for LP)		2351	4822 122 32893	100 nF	50V
2203	4822 122 32442	10 nF (only for LP)		2352	4822 122 32893	100 nF	50V
2204	4822 122 32442	10 nF (only for LP)		2353	4822 122 32542	47 nF	
2205	4822 124 41516	47 μ F	16V (only for LP)	2354	4822 124 22426	100 μ F	16V
2206	4822 122 32442	10 nF (only for LP)		2355	5322 122 31647	1 nF	
2207	4822 122 32442	10 nF (only for LP)		2356	4822 122 32893	100 nF	5V
2208	4822 122 32442	10 nF (only for LP)		2358	4822 122 31797	22 nF	
2209	4822 122 31972	39 pF (only for LP)		2359	5322 122 31647	1 nF	
2210	4822 124 41521	10 μ F	25V (only for LP)	2362	4822 122 32442	10 nF	
2211	4822 124 41521	10 μ F	25V (only for LP)	2363	5322 122 33446	3.3 nF	
2212	4822 124 41521	10 μ F	25V (only for LP)	2364	5322 122 31647	1 nF	
2213	5322 122 31842	330 pF (only for LP)		2370	4822 122 31797	22 nF	
2214	4822 122 32542	47 nF (only for LP)		2514	4822 122 31769	18 pF	
2215	4822 124 41521	10 μ F	25V (only for LP)	2515	4822 122 31797	22 nF	
2216	4822 124 41521	10 μ F	25V (only for LP)	2601	4822 124 41516	47 μ F	16V
2217	4822 122 32442	10 nF (only for LP)		2602	4822 124 41588	4.7 μ F	25V
2218	4822 122 32442	10 nF (only for LP)		2603	4822 124 41516	47 μ F	16V
2219	4822 122 32442	10 nF (only for LP)		2604	4822 122 32442	10 nF	
2300	4822 122 31784	4.7 nF		2605	4822 122 31797	22 nF	
2301	4822 124 41516	47 μ F	16V	2606	4822 124 41516	47 μ F	16V
2302	4822 124 41516	47 μ F	16V	2607	4822 122 31781	1.5 nF	
2303	4822 122 32542	47 nF		2608	4822 124 41588	4.7 μ F	25V
2304	4822 122 32893	100 nF	5V	2609	5322 122 31647	1 nF	
2305	4822 124 41516	47 μ F	16V	2610	4822 122 32442	10 nF	
2306	4822 122 32542	47 nF		2611	4822 124 22426	100 μ F	16V
2307	4822 122 32542	47 nF		2612	4822 124 41588	4.7 μ F	25V
2308	5322 122 31647	1 nF		2613	5322 122 31647	1 nF	
2309	5322 122 31647	1 nF		2614	4822 124 41516	47 μ F	16V
2311	4822 124 41516	47 μ F	16V	2615	4822 121 42408	220 nF	63V
2312	4822 122 31797	22 nF		2616	4822 122 31765	100 pF	
2313	4822 124 22425	2.2 μ F	50V	2617	4822 122 31765	100 pF	
2314	4822 124 22425	2.2 μ F	50V	2618	4822 122 31965	220 pF	
2315	4822 124 22425	2.2 μ F	50V	2620	5322 122 31647	1 nF	
2316	4822 122 31797	22 nF		2621	4822 122 31775	680 pF	
2317	4822 124 23034	0.47 μ F	50V	2660	4822 124 42097	22 μ F	16V
2318	4822 122 32893	100 nF	5V	2661	5322 121 42491	47 nF	50V

Family board JFBU

2662	5322 122 31647	1 nF
2663	5322 122 31842	330 pF
2664	4822 121 43801	12 nF 50V
2665	4822 124 41516	47 µF 16V
2700	4822 122 32893	100 nF 50V
2701	4822 122 32893	100 nF 50V
2702	4822 122 31797	22 nF
2703	4822 122 32442	10 nF
2704	4822 122 32442	10 nF
2710	4822 122 32893	100 nF 50V (only for VPS)
2711	4822 122 31825	27 pF (only for VPS)
2712	5322 121 42489	33 nF 50V (only for VPS)
2713	4822 122 32442	10 nF (only for VPS)
2714	4822 124 42097	22 µF 16V (only for VPS)
2730	4822 124 22425	2.2 µF 50V
2740	4822 124 41516	47 µF 16V
2741	4822 124 22429	1 µF 50V
2743	4822 122 32893	100 nF 5V
2744	4822 122 32442	10 nF
2745	4822 122 32893	100 nF 5V
2746	4822 122 32893	100 nF 5V
2747	4822 124 22425	2.2 µF 50V
2748	4822 122 32893	100 nF 5V
2752	4822 124 41516	47 µF 16V
2753	4822 122 31797	22 nF

RESISTORS

3001	4822 116 52201	75 Ω
3002	4822 051 10473	47 kΩ
3003	4822 051 10101	100 Ω
3004	4822 051 20222	2.2 kΩ
3005	4822 051 10151	150 Ω
3006	4822 051 10472	4.7 kΩ
3007	4822 051 10182	1.8 kΩ
3008	4822 051 10102	1 kΩ
3009	4822 051 10472	4.7 kΩ
3012	4822 051 10472	4.7 kΩ
3013	4822 051 10104	100 kΩ
3014	4822 051 10103	10 kΩ
3015	4822 051 10102	1 kΩ
3016	4822 051 10103	10 kΩ
3017	4822 051 10102	2.2 kΩ
3018	4822 051 20222	2.2 kΩ
3019	4822 051 10822	8.2 kΩ
3020	4822 051 20222	2.2 kΩ
3021	4822 051 10472	4.7 kΩ
3022	4822 051 10434	560 kΩ
3023	4822 051 10152	1.5 kΩ
3024	4822 051 10271	270 Ω
3025	4822 051 10272	2.7 kΩ
3026	4822 051 10152	1.5 kΩ
3027	4822 051 10152	1.5 kΩ
3028	4822 051 10152	1.5 kΩ
3029	4822 051 10151	150 Ω
3030	4822 051 10182	1.8 kΩ
3031	4822 051 10182	1.8 kΩ
3032	4822 051 10153	15 kΩ
3033	4822 100 11633	47 kΩ
3034	4822 051 10274	270 kΩ
3035	4822 100 11633	47 kΩ
3036	4822 051 10105	1 MΩ
3037	4822 051 10102	1 kΩ
3038	4822 051 10102	1 kΩ
3039	4822 051 10472	4.7 kΩ
3040	4822 051 10472	4.7 kΩ
3041	4822 100 11633	47 kΩ

3042	4822 051 10912	9.1 kΩ
3043	4822 051 10272	2.7 kΩ
3044	4822 100 11632	2.2 kΩ
3045	4822 051 10272	2.7 kΩ
3047	4822 051 10822	8.2 kΩ
3048	4822 100 11632	2.2 kΩ
3049	4822 101 11034	22 kΩ
3050	4822 116 52256	2.2 kΩ
3051	4822 051 10152	1.5 kΩ
3052	4822 116 52204	1 kΩ
3053	4822 051 10152	1.5 kΩ
3054	4822 051 10102	1 kΩ
3055	4822 051 10103	10 kΩ
3056	4822 051 10562	5.6 kΩ
3057	4822 051 10102	1 kΩ
3058	4822 051 10102	1 kΩ
3059	4822 051 10102	1 kΩ
3060	4822 051 10331	330 Ω
3061	4822 051 10471	470 Ω
3062	4822 051 10561	560 Ω
3063	4822 051 10561	560 Ω
3064	4822 051 10561	560 Ω
3065	4822 051 10681	680 Ω
3066	4822 051 10471	470 Ω
3067	4822 051 10331	330 Ω
3068	4822 051 10102	1 kΩ
3069	4822 051 10471	470 Ω
3070	4822 051 10471	470 Ω
3071	4822 051 20222	2.2 kΩ
3072	4822 100 11602	10 kΩ
3073	4822 051 10821	820 Ω
3074	4822 051 10102	1 kΩ
3075	4822 051 10759	75 Ω
3076	4822 051 10759	75 Ω
3077	4822 051 10229	22 Ω
3078	4822 051 10471	470 Ω
3079	4822 051 20222	2.2 kΩ
3080	4822 100 11633	47 kΩ (only for LP)
3081	4822 051 10102	1 kΩ
3082	4822 116 52175	100 Ω
3083	4822 116 52233	10 kΩ
3084	4822 116 52204	1 kΩ
3085	4822 116 52204	1 kΩ
3087	4822 116 52204	1 kΩ
3101	4822 051 10102	1 kΩ
3102	4822 051 20222	2.2 kΩ
3103	4822 051 10682	6.8 kΩ
3104	4822 051 10271	270 Ω
3105	4822 051 10152	1.5 kΩ
3106	4822 051 10152	1.5 kΩ
3107	4822 051 10102	1 kΩ
3108	4822 051 10102	1 kΩ
3109	4822 051 10561	560 Ω
3110	4822 051 10102	1 kΩ
3111	4822 051 10471	470 Ω
3112	4822 051 10561	560 Ω
3115	4822 051 10105	1 MΩ
		(only for PAL/SECAM/B/G)
3116	4822 051 10105	1 MΩ
		(only for PAL/SECAM/B/G)
3117	4822 051 10102	1 kΩ
3118	4822 051 20222	2.2 kΩ
3119	4822 051 10822	8.2 kΩ
		(only for PAL/SECAM/B/G)
3120	4822 051 10472	4.7 kΩ
3121	4822 116 52233	10 kΩ
		(only for PAL/SECAM/B/G)

Family board JFBU

3122	4822 051 10821	820 Ω (only for PAL/SECAM/B/G)	3325	4822 051 10472	4.7 k Ω
3123	4822 051 10102	1 k Ω	3327	4822 101 11035	100 k Ω
3124	4822 051 10274	270 k Ω	3328	4822 116 52204	1 k Ω
3125	4822 051 10333	33 k Ω	3329	4822 116 52204	1 k Ω
3126	4822 101 11035	100 k Ω	3330	4822 051 10103	10 k Ω
3127	4822 051 10182	1.8 k Ω	3331	4822 116 81202	62 k Ω
3128	4822 051 10182	1.8 k Ω	3332	4822 051 10102	1 k Ω
3129	4822 051 10223	22 k Ω	3333	4822 116 52204	1 k Ω
3130	4822 051 10152	1.5 k Ω	3334	4822 116 52204	1 k Ω
3131	4822 051 10332	3.3 k Ω	3335	4822 051 10472	4.7 k Ω
3132	4822 051 10103	10 k Ω	3336	4822 116 52251	18 k Ω
3133	4822 051 10223	22 k Ω (only for PAL/SECAM/B/G)	3337	4822 051 10472	4.7 k Ω
3134	4822 051 10472	4.7 k Ω	3338	4822 051 10102	1 k Ω
3135	4822 051 10682	6.8 k Ω	3339	4822 116 52204	1 k Ω
3136	4822 051 20222	2.2 k Ω	3340	4822 051 10103	10 k Ω
3137	4822 051 10821	820 Ω	3341	4822 116 52233	10 k Ω
3138	4822 051 10221	220 Ω	3342	4822 051 10103	10 k Ω
3139	4822 051 10152	1.5 k Ω	3343	4822 116 52204	1 k Ω
3141	4822 116 52284	47 k Ω	3344	4822 051 10472	4.7 k Ω
3143	4822 051 10103	10 k Ω	3345	4822 051 10103	10 k Ω
3145	4822 051 10822	8.2 k Ω	3346	4822 051 10103	10 k Ω
3147	4822 051 10151	150 Ω	3347	4822 051 10472	4.7 k Ω
3148	4822 051 10102	1 k Ω	3348	4822 051 10472	4.7 k Ω
3149	4822 116 52234	100 k Ω	3349	4822 116 52283	4.7 k Ω
3150	4822 051 10274	270 k Ω	3350	4822 051 10472	4.7 k Ω
3201	4822 051 10682	6.8 k Ω (only for LP)	3351	4822 051 10472	4.7 k Ω
3202	4822 051 10103	10 k Ω (only for LP)	3352	4822 116 81202	62 k Ω
3203	4822 051 10102	1 k Ω (only for LP)	3353	4822 051 10103	10 k Ω
3204	4822 051 10102	1 k Ω (only for LP)	3354	4822 051 10103	10 k Ω
3205	4822 051 10103	10 k Ω (only for LP)	3355	4822 051 10472	4.7 k Ω
3206	4822 051 10272	2.7 k Ω (only for LP)	3356	4822 051 10474	470 k Ω
3207	4822 051 10182	1.8 k Ω (only for LP)	3358	4822 051 10103	10 k Ω
3211	4822 051 10391	390 Ω (only for LP)	3359	4822 051 10472	4.7 k Ω
3212	4822 051 20222	2.2 k Ω (only for LP)	3360	4822 116 52283	4.7 k Ω
3213	4822 051 10104	100 k Ω (only for LP)	3362	4822 051 10223	22 k Ω
3214	4822 051 10821	820 Ω (only for LP)	3363	4822 051 10223	22 k Ω
3215	4822 051 10102	1 k Ω (only for LP)	3364	4822 050 11003	10 k Ω
3216	4822 051 10471	470 Ω (only for LP)	3365	4822 051 10223	22 k Ω
3217	4822 051 10471	470 Ω (only for LP)	3366	4822 051 10153	15 k Ω
3218	4822 051 10152	1.5 k Ω (only for LP)	3367	4822 116 52233	10 k Ω
3219	4822 051 10562	5.6 k Ω (only for LP)	3368	4822 116 52233	10 k Ω
3300	4822 050 12203	22 k Ω	3369	4822 051 10474	470 k Ω
3301	4822 050 18202	8.2 k Ω	3370	4822 051 10472	4.7 k Ω
3302	4822 050 12203	22 k Ω	3371	4822 116 81202	62 k Ω
3303	4822 050 12204	220 k Ω	3372	4822 051 10103	10 k Ω
3305	4822 050 17503	75 k Ω	3373	4822 051 10471	470 Ω
3306	4822 050 12204	220 k Ω	3376	4822 051 10103	10 k Ω
3307	4822 050 17503	75 k Ω	3377	4822 051 10393	39 k Ω
3308	4822 116 52233	10 k Ω	3378	4822 051 10471	470 Ω
3309	4822 051 10472	4.7 k Ω	3379	4822 051 10101	100 Ω
3310	4822 051 10221	220 Ω	3380	4822 051 10471	470 Ω
3311	4822 116 52175	100 Ω	3382	4822 051 10101	100 Ω
3312	4822 051 10569	56 Ω	3383	4822 051 10101	100 Ω
3313	4822 051 10471	470 Ω	3384	4822 051 10101	100 Ω
3314	4822 116 40151	5.6 Ω	3385	4822 051 10472	4.7 k Ω
3315	4822 051 10331	330 Ω	3386	4822 116 52204	1 k Ω
3316	4822 051 10471	470 Ω	3388	4822 050 16204	620 k Ω
3317	4822 051 10472	4.7 k Ω	3390	4822 051 10339	33 Ω
3318	4822 051 10104	100 k Ω	3391	4822 116 52175	100 Ω
3319	4822 051 10104	100 k Ω	3392	4822 116 52175	100 Ω
3320	4822 051 10104	100 k Ω	3393	4822 116 52175	100 Ω
3321	4822 051 10474	470 k Ω	3394	4822 051 10102	1 k Ω
3322	4822 051 10104	100 k Ω	3395	4822 116 80176	1 Ω
3323	4822 051 10474	470 k Ω	3396	4822 051 10102	1 k Ω
3324	4822 116 52283	4.7 k Ω	3397	4822 051 10102	1 k Ω
			3400	4822 051 10472	4.7 k Ω
			3401	4822 050 12703	27 k Ω

Family board JFBU

3402	4822 051 10472	4.7 kΩ	3711	4822 051 10562	5.6 kΩ (only for VPS)
3403	4822 051 10472	4.7 kΩ	3712	4822 051 10101	100 Ω (only for VPS)
3404	4822 051 10103	10 kΩ	3713	4822 116 52235	1 MΩ (only for VPS)
3412	4822 116 52283	4.7 kΩ	3714	4822 051 10104	100 kΩ (only for VPS)
3413	4822 051 10102	1 kΩ	3715	4822 051 10332	3.3 kΩ (only for VPS)
3415	4822 051 10102	1 kΩ	3716	4822 051 10682	6.8 kΩ (only for VPS)
3416	4822 051 10472	4.7 kΩ	3717	4822 051 10105	1 MΩ (only for VPS)
3417	4822 051 10223	22 kΩ	3718	4822 051 10101	100 Ω (only for VPS)
3418	4822 116 52234	100 kΩ	3719	4822 051 10101	100 Ω
3419	4822 051 10224	220 kΩ	3730	4822 051 10473	47 kΩ
3420	4822 051 10472	4.7 kΩ	3735	4822 051 10102	1 kΩ
3421	4822 051 10471	470 Ω	3736	4822 051 10223	22 kΩ
3422	4822 051 10472	4.7 kΩ	3737	4822 051 10473	47 kΩ
3423	4822 051 10221	220 Ω	3738	4822 051 10102	1 kΩ
3425	4822 051 10472	4.7 kΩ	3740	4822 051 10223	22 kΩ
3430	4822 051 10102	1 kΩ	3741	4822 051 10223	22 kΩ
3431	4822 116 52283	4.7 kΩ	3744	4822 051 10223	22 kΩ
3535	4822 051 10102	1 kΩ	3745	4822 051 10682	6.8 kΩ
3539	4822 051 10561	560 Ω	3746	4822 051 10331	330 Ω
3541	4822 116 52217	270 Ω	3747	4822 100 11639	22 kΩ
3547	4822 051 10102	1.0 kΩ	3798	4822 050 21502	1.5 kΩ
3548	4822 116 52269	33 Ω	3799	4822 051 10102	1 kΩ
3549	4822 051 10152	1.5 kΩ	3801	4822 051 10008	0 Ω
3550	4822 051 10102	1 kΩ	3824	4822 051 10008	0 Ω
3587	4822 051 10391	390 Ω	3825	4822 051 10008	0 Ω (only for PALI)
3601	4822 116 52269	3.3 kΩ	3826	4822 051 10008	0 Ω
3602	4822 116 52269	3.3 kΩ	3827	4822 051 10008	0 Ω
3603	4822 116 52269	3.3 kΩ	3828	4822 051 10008	0 Ω (only for PALI)
3604	4822 051 10332	3.3 kΩ	3829	4822 051 10008	0 Ω
3605	4822 116 52217	270 Ω	3830	4822 051 10008	0 Ω
3606	4822 116 52217	270 Ω	3831	4822 051 10008	0 Ω
3607	4822 051 10103	10 kΩ	3832	4822 051 10008	0 Ω
3608	4822 051 10223	22 kΩ	3834	4822 051 10008	0 Ω
3609	4822 051 10102	1 kΩ	3836	4822 051 10008	0 Ω
3610	4822 051 10471	470 Ω	3840	4822 051 10008	0 Ω
3611	4822 051 10182	1.8 kΩ	3842	4822 051 10008	0 Ω
3612	4822 051 10103	10 kΩ	3843	4822 051 10008	0 Ω
3613	4822 051 10471	470 Ω	3844	4822 051 10008	0 Ω
3614	4822 051 10394	390 kΩ	3845	4822 051 10008	0 Ω (not for LP)
3615	4822 051 10123	12 kΩ	3846	4822 051 10008	0 Ω
3616	4822 051 10562	5.6 kΩ	3847	4822 051 10008	0 Ω
3617	4822 100 11602	10 kΩ	3848	4822 051 10008	0 Ω
3618	4822 051 10105	1 MΩ	3849	4822 051 10008	0 Ω
3619	4822 051 10104	100 kΩ	3850	4822 051 10008	0 Ω
3620	4822 051 10473	47 kΩ	3851	4822 051 10008	0 Ω
3621	4822 051 10104	100 kΩ	3853	4822 051 10008	0 Ω
3622	4822 051 10271	270 Ω	3854	4822 051 10008	0 Ω
3623	4822 051 10104	100 kΩ	3855	4822 051 10008	0 Ω
3625	4822 051 10104	100 kΩ	3856	4822 051 10008	0 Ω
3626	4822 051 10472	4.7 kΩ	3857	4822 051 10008	0 Ω
3627	4822 051 10332	3.3 kΩ	3858	4822 051 10008	0 Ω
3628	4822 051 20183	18 kΩ	3859	4822 051 10008	0 Ω
3629	4822 051 10104	100 kΩ	3860	4822 051 10008	0 Ω
3630	4822 051 10339	33 Ω	3861	4822 051 10008	0 Ω
3660	4822 051 10229	22 Ω	3862	4822 051 10008	0 Ω
3661	4822 051 10561	560 Ω	3863	4822 051 10008	0 Ω
3662	4822 051 10272	2.7 kΩ	3864	4822 051 10008	0 Ω
3663	4822 116 80691	270 Ω	3865	4822 051 10008	0 Ω
3664	4822 051 10473	47 kΩ	3866	4822 051 10008	0 Ω
3665	4822 101 11035	100 kΩ	3867	4822 051 10008	0 Ω
3701	4822 051 10472	4.7 kΩ	3869	4822 051 10008	0 Ω
3702	4822 051 10101	100 Ω	3870	4822 051 10008	0 Ω
3703	4822 051 10101	100 Ω	3872	4822 051 10008	0 Ω
3704	4822 051 10122	1.2 kΩ	3876	4822 051 10008	0 Ω
3705	4822 051 20183	18 kΩ	3877	4822 051 10008	0 Ω
3706	4822 051 10101	100 Ω	3878	4822 051 10008	0 Ω
3709	4822 051 10105	1 MΩ (only for VPS)	3880	4822 051 10008	0 Ω

Family board JFBU

3881	4822 051 10008	0 Ω
3882	4822 051 10008	0 Ω
3883	4822 051 10008	0 Ω
3884	4822 051 10008	0 Ω
3885	4822 051 10008	0 Ω
3886	4822 051 10008	0 Ω
3887	4822 051 10008	0 Ω
3888	4822 051 10008	0 Ω
3889	4822 051 10008	0 Ω
3890	4822 051 10008	0 Ω
3892	4822 051 10008	0 Ω
3893	4822 051 10008	0 Ω
3896	4822 051 10008	0 Ω
3899	4822 051 10008	0 Ω
3901	4822 051 10008	0 Ω
3902	4822 051 10008	0 Ω
3903	4822 051 10008	0 Ω
3904	4822 051 10008	0 Ω
3905	4822 051 10008	0 Ω
3906	4822 051 10008	0 Ω
3907	4822 051 10008	0 Ω
3908	4822 051 10008	0 Ω
3909	4822 051 10008	0 Ω
3910	4822 051 10008	0 Ω
3912	4822 051 10008	0 Ω (not for LP)
3913	4822 051 10008	0 Ω
3915	4822 051 10008	0 Ω (not for LP)
3916	4822 051 10008	0 Ω
3917	4822 051 10008	0 Ω
3918	4822 051 10008	0 Ω
3919	4822 051 10008	0 Ω
3921	4822 051 10008	0 Ω
3922	4822 051 10008	0 Ω
3923	4822 051 10008	0 Ω
3924	4822 051 10008	0 Ω (not for LP)
3925	4822 051 10008	0 Ω

COILS

5001	4822 157 60383
5002	4822 156 21454
5003	4822 157 62768
5004	4822 157 53265
5005	4822 157 52286
5006	4822 157 52286
5007	4822 157 52842
5008	4822 157 53251
5009	4822 157 52842
5010	4822 157 53265
5011	4822 157 53253
5012	4822 157 52842
5013	4822 157 60082
5014	4822 157 53951
5015	4822 157 60082
5016	4822 157 53253
5017	4822 157 52286

5111	4822 320 40168	
5201	4822 157 53251	(only for LP)
5202	4822 320 40096	(only for LP)
5203	4822 157 53251	(only for LP)
5300	4822 157 53005	
5301	4822 157 52285	
5302	4822 157 53005	
5502	4822 157 52285	
5503	4822 157 52285	
5601	4822 157 53249	
5660	4822 157 53531	
5701	4822 157 53529	
5710	4822 157 52286	
5730	4822 157 50961	
5740	4822 157 60503	
5741	4822 157 52842	
5742	4822 157 53251	

DIODES

6001	4822 130 30621	1N4148
6002	4822 130 30621	1N4148
6003	4822 130 33668	BZX55/B9V1
6004	4822 130 30621	1N4148
6101	4822 130 81268	SD101A
6201	4822 130 30621	1N4148 (only for LP)
6300	4822 130 32462	RGP10-B
6301	4822 130 30621	1N4148
6302	4822 130 30621	1N4148
6522	5322 130 34834	BZX79-C3V6
6701	4822 130 30621	1N4148

TRANSISTORS & IC's

7001	4822 130 41715	BC328-40
7002	5322 130 41983	BC858B
7003	4822 130 60383	BF824
7004	5322 130 41983	BC858B
7006	5322 130 44336	BSV52
7007	5322 130 41983	BC858B
7008	4822 130 42353	BFS19
7009	4822 130 60383	BF824
7010	4822 130 42353	BFS19
7011	4822 130 42353	BFS19
7012	5322 130 41983	BC858B
7013	4822 130 60145	DTC124EK
7014	5322 130 41982	BC848B
7015	4822 130 60145	DTC124EK
7051	4822 209 73579	AN3236K
7052	4822 209 73578	MSM6965-3RS
7053	4822 209 63099	TC4030BFN (ELP)
7101	5322 130 41982	BC848B
7102	4822 130 42353	BFS19
7103	5322 130 41982	BC848B
7104	5322 130 41983	BC858B
7105	5322 130 41982	BC848B

48B	5018	4822 157 53251	7106	5322 130 41982	BC8
58B	5101	4822 157 60385	7107	5322 130 41983	BC8
124EK	5102	4822 157 60384	7108	4822 130 60145	DTC
48B	5103	4822 157 53251	7109	5322 130 41982	BC8
48B	5104	4822 157 53252	7110	5322 130 41982	BC8
644N	5105	4822 157 53951	7151	4822 209 60091	TA8
311	5106	4822 157 53251	7152	4822 209 60376	LA7
for PAL/SECAM/B/G)	5107	4822 157 53252			(only
48B (only for LP)	5108	4822 157 52265	7201	5322 130 41982	BC8
48B (only for LP)	5109	4822 157 53253	7202	5322 130 41982	BC8
19 (only for LP)	5110	4822 157 60386	7203	4822 130 42353	BFS

Family board JFBU

Main Erase Oscillator MEO

7204	5322 130 41982	BC848B (only for LP)
7251	4822 209 60172	AN3494NK (only for LP)
7300	5322 130 41982	BC848B
7301	5322 130 41982	BC848B
7302	4822 130 60492	BC376
7303	5322 130 41982	BC848B
7304	5322 130 41983	BC858B
7305	5322 130 44336	BSV52
7306	5322 130 41982	BC848B
7307	5322 130 41982	BC848B
7308	5322 130 41982	BC848B
7309	4822 130 60089	BD436
7350	4822 209 60175	LM358M
7351	4822 209 62458	SAA1310
7352	4822 209 63098	TC4052BFN ELP
7353	4822 209 60177	LM339M
7354	4822 209 63102	P8052-JUTD1-1U/R9408
7355	4822 209 83331	SAD1009P
7356	4822 209 60129	TDA8136 (STM)
7357	4822 209 80797	LM393N
7358	4822 209 60046	BA6432S
7359	4822 209 62457	TDA5140A/C1
7360	4822 209 63101	TC4071BFN ELP
7361	5322 130 41982	BC848B
7511	5322 130 41982	BC848B
7515	5322 130 41983	BC858B
7516	4822 130 41344	BC337-40
7601	4822 209 60074	BA7766AS
7602	5322 130 41982	BC848B
7660	4822 130 41715	BC328-40
7661	4822 130 41344	BC337-40
7710	4822 209 73336	SBA5613 (only for VR50)
7730	4822 130 41715	BC328-40
7731	5322 130 41982	BC848B
7732	5322 130 41982	BC848B
7740	4822 209 63061	TDA3842

CONNECTOR

4822 264 40256 3 fold

CAPACITORS

2001	4822 124 22451	22 μF	
2002	4822 122 32972	1 nF	
2003	4822 121 43145	33 nF	50 V
2004	4822 121 51304	10 nF	50 V
2005	4822 121 51307	27 nF	50 V
2006	4822 124 22451	22 μF	

RESISTORS

3001	5322 116 80438	330 Ω
3002	5322 116 80348	330 Ω
3003	4822 116 81172	8.2 kΩ
3004	4822 111 90248	2.2 kΩ
3005	4822 111 90381	1.5 Ω
3006	5322 116 80441	33 kΩ
3007	5322 116 80427	1 kΩ
3008	4822 111 90251	22 kΩ

COILS

5001 4822 157 53531

DIODE

6001 5322 130 31928 BAS16

TRANSISTORS

7001	5322 130 41983	BC858B
7002	4822 130 60145	DTC124EK
7003	4822 130 42615	BC817-40

Headamplifier HV4/2

4822 214 32784 HV4/2
(for VR502 and VR701/7SB02)

FM-Audio Signal panel JAF

CONNECTORS

0007	4822 267 51051	SOCKET
0008	4822 267 40624	SOCKET 5-PIN
0009	4822 267 50621	SOCKET 7-PIN
0010	4822 267 40697	SOCKET 6-PIN
0011	4822 265 40475	SOCKET 8-PIN
0013	4822 267 50723	SOCKET 13-PIN
0014	4822 267 50661	SCART
0015	4822 265 41077	CINCH-CONNECTOR
0016	4822 267 40697	SOCKET 6-PIN
0017	4822 265 40475	SOCKET 8-PIN

MISCELLANEOUS

1050	4822 242 72165	FILTER 1,4 MHz
1150	4822 242 72166	FILTER 1,8 MHz
1250	4822 071 51601	FUSE 160 MA
1750	4822 242 73809	CRYSTAL 10 MHz
1760	4822 242 70714	CER.FILTER 5,5 MHz
1760	4822 242 71841	CER.FILTER 6,0 MHz (only for PALI)
1761	4822 242 70485	CER.FILTER 5,74 MHz
1770	4822 242 72302	5,85 MHz
1770	4822 242 73822	CRYSTAL 6.552 MHz (only for PALI)
1771	4822 242 72304	5,824 MHz
1772	4822 071 51601	FUSE 160 MA
1840	4822 242 73796	SAW FILTER OFWG9201
1860	4822 071 55001	FUSE 500 MA

CAPACITORS

2001	4822 124 42097	22 μ F	16 V
2002	4822 122 31781	1.5 nF	
2003	4822 122 32893	100 nF	
2004	4822 122 32893	100 nF	5 V
2005	4822 126 11142	470 pF	
2006	4822 122 31765	100 pF	
2007	4822 124 41576	2.2 μ F	50 V
2008	5322 122 33446	3.3 nF	
2009	4822 124 41521	10 μ F	25 V
2010	4822 124 41576	2.2 μ F	50 V
2011	4822 124 42097	22 μ F	16 V
2012	4822 124 41521	10 μ F	25 V
2013	4822 124 22787	6.8 μ F	25 V
2014	4822 122 31797	22 nF	
2015	4822 124 41576	2.2 μ F	50 V
2016	4822 122 32442	10 nF	
2017	4822 124 41697	47 μ F	16 V
2018	4822 124 42096	220 μ F	6,3 V
2019	4822 122 31644	2.2 nF	
2020	4822 124 42097	22 μ F	16 V
2021	4822 122 32482	22 pF	
2022	4822 124 41643	100 μ F	16 V
2023	4822 124 42097	22 μ F	16 V
2024	4822 124 41521	10 μ F	25 V
2025	4822 124 41576	2.2 μ F	50 V
2027	4822 124 41643	100 μ F	16 V
2101	4822 124 42097	22 μ F	16 V
2102	5322 122 31647	1 nF	
2103	4822 122 32893	100 nF	5 V
2104	4822 122 32893	100 nF	5 V
2105	4822 126 11142	470 pF	
2106	4822 122 31765	100 pF	
2107	4822 124 41576	2.2 μ F	50 V
2108	5322 122 33446	3.3 nF	
2109	4822 124 41521	10 μ F	25 V
2110	4822 124 41576	2.2 μ F	50 V

2111	4822 124 42097	22 μ F	16 V
2112	4822 124 41521	10 μ F	25 V
2113	4822 124 22787	6.8 MF	25 V
2114	4822 122 31797	22 nF	
2115	4822 124 41576	2.2 μ F	50 V
2116	4822 122 32442	10 nF	
2117	4822 124 41697	47 μ F	16 V
2118	4822 124 42096	220 μ F	6,3 V
2119	4822 122 31644	2.2 nF	
2120	4822 124 42097	22 μ F	16 V
2121	4822 122 32482	22 pF	
2122	4822 124 41643	100 μ F	16 V
2123	4822 124 42097	22 μ F	16 V
2124	4822 124 41521	10 μ F	25 V
2125	4822 124 41576	2.2 μ F	50 V
2127	4822 124 41643	100 μ F	16 V
2200	4822 122 31797	22 nF	
2201	4822 122 31797	22 nF	
2202	4822 122 31839	82 pF	
2203	4822 122 31765	100 pF	
2204	4822 122 31797	22 nF	
2205	4822 124 42097	22 μ F	16 V
2206	4822 122 31775	680 pF	
2207	4822 122 31797	22 nF	
2208	4822 122 31797	22 nF	
2209	4822 124 41643	100 μ F	16 V
2210	4822 122 31765	100 pF	
2211	4822 124 40196	220 μ F	16 V
2212	4822 124 41576	2.2 μ F	50 V
2213	4822 122 31797	22 nF	
2214	4822 124 41643	100 μ F	16 V
2215	4822 122 31797	22 nF	
2216	4822 124 41521	10 μ F	25 V
2217	4822 122 31797	22 nF	
2218	4822 122 31797	22 nF	
2219	4822 124 41576	2.2 μ F	50 V
2220	4822 124 41506	47 μ F	16 V
2305	4822 122 31727	470 pF	
2318	4822 122 31644	2.2 nF	
2321	4822 122 31727	470 pF	
2326	4822 122 31644	2.2 nF	
2330	4822 122 31644	2.2 nF	
2331	4822 122 31727	470 pF	
2332	4822 122 32893	100 nF	
2333	4822 122 32893	100 nF	5 V
2334	4822 122 31727	470 pF	
2405	4822 122 31727	470 pF	
2418	4822 122 31644	2.2 nF	
2421	4822 122 31727	470 pF	
2426	4822 122 31644	2.2 nF	
2430	4822 122 31644	2.2 nF	
2431	4822 122 31727	470 pF	
2432	4822 122 32893	100 nF	
2433	4822 122 32893	100 nF	5 V
2434	4822 122 31727	470 pF	
2508	4822 122 32442	10 nF	
2510	4822 124 41697	47 μ F	16 V
2512	4822 124 41697	47 μ F	16 V
2519	4822 124 41521	10 μ F	25 V
2525	4822 122 32893	100 nF	5 V
2607	4822 122 31797	22 nF	
2620	4822 124 41643	100 μ F	16 V
2633	4822 122 32893	100 nF	5 V
2634	4822 122 32893	100 nF	5 V
2635	4822 122 31727	470 pF	
2740	4822 122 32504	15 pF	
2741	4822 122 32504	15 pF	
2743	4822 122 31797	22 nF	
2744	4822 122 31797	22 nF	

FM-Audio Signal panel JAF

2750	4822 124 41521	10 μ F	25 V
2751	4822 124 41521	10 μ F	25 V
2752	4822 124 41697	47 μ F	16 V
2753	4822 124 41697	47 μ F	16 V
2754	4822 121 42408	220 nF	63 V
2755	4822 122 31797	22 nF	
2756	4822 124 41521	10 μ F	25 V
2757	4822 124 41521	10 μ F	25 V
2758	4822 124 42097	22 μ F	16 V
2761	5322 121 42386	100 nF	63 V
2762	4822 124 41576	2.2 μ F	50 V
2763	4822 124 41576	2.2 μ F	50 V
2764	4822 124 42097	22 μ F	16 V
2765	4822 122 31797	22 nF	
2769	4822 124 40242	1 μ F	50 V
2772	4822 125 50394	4,2-20 pF	
2773	4822 122 32504	15 pF	
2774	4822 122 31769	18 pF	
2775	4822 122 31774	56 pF	
2776	4822 121 51252	470 nF	63 V
2777	4822 121 51252	470 nF	63 V
2778	4822 122 32442	10 nF	
2779	4822 124 40242	1 μ F	50 V
2780	4822 122 32442	10 nF	
2781	4822 122 32442	10 nF	
2782	4822 122 32442	10 nF	
2783	4822 122 32893	100 nF	5 V
2784	4822 122 32893	100 nF	5 V
2785	4822 122 31965	220 pF	
2786	4822 122 31965	220 pF	
2787	4822 122 32893	100 nF	5 V
2788	4822 122 32893	100 nF	5 V
2789	4822 122 32442	10 nF	
2790	4822 122 32442	10 nF	
2791	4822 124 40242	1 μ F	50 V
2792	4822 122 31774	56 pF	
2794	4822 122 31772	47 pF	
2795	4822 122 31769	18 pF	
2796	4822 122 32893	100 nF	5 V
2797	4822 122 32442	10 nF	
2798	4822 122 32442	10 nF	
2799	4822 122 32893	100 nF	5 V
2800	4822 122 31772	47 pF	
2801	4822 122 32893	100 nF	5 V
2802	4822 122 31769	18 pF	
2803	4822 125 50412	7,5-50 pF	
2804	4822 122 32442	10 nF	
2805	4822 122 31765	100 pF	
2806	4822 122 31797	22 nF	
2807	4822 124 42097	22 μ F	16 V
2810	4822 122 32893	100 nF	5 V
2811	4822 124 41643	100 μ F	16 V
2820	4822 122 33485	56 nF	
2820	4822 122 33608	39 nF (only for PALI)	
2821	4822 122 31784	4.7 nF	
2821	4822 122 32566	3.9 nF (only for PALI)	
2822	4822 122 33485	56 nF	
2822	4822 122 33608	39 nF (only for PALI)	
2823	4822 122 31784	4.7 nF	
2823	4822 122 32566	3.9 nF (only for PALI)	
2824	4822 122 32893	100 nF	5 V
2828	4822 122 32893	100 nF	5 V
2829	4822 124 41643	100 μ F	16 V
2830	4822 124 41521	10 μ F	25 V
2831	5322 121 42386	100 nF	63 V
2833	4822 124 41521	10 μ F	25 V (only for NICAM)
2834	4822 124 41521	10 μ F	25 V (only for NICAM)
2835	4822 124 41521	10 μ F	25 V
2837	4822 124 42097	22 μ F	16 V (only for NICAM)

2840	4822 122 32482	22 pF	63 V
2860	4822 124 41643	100 μ F	16 V

RESISTORS

3001	4822 051 10102	1 k Ω
3002	4822 051 10102	1 k Ω
3003	4822 051 10152	1.5 k Ω
3004	4822 100 11632	2.2 k Ω
3005	4822 051 10682	6.8 k Ω
3006	4822 101 11064	4.7 k Ω
3007	4822 051 10103	10 k Ω
3008	4822 100 11633	47 k Ω
3009	4822 051 10105	1 M Ω
3010	4822 051 20222	2.2 k Ω
3011	4822 116 52257	22 k Ω
3012	4822 051 10221	220 Ω
3013	4822 051 10473	47 k Ω
3014	4822 051 20222	2.2 k Ω
3015	4822 116 90536	120 Ω
3016	4822 051 10103	10 k Ω
3017	4822 051 10103	10 k Ω
3018	4822 051 10102	1 k Ω
3019	4822 051 10104	100 k Ω
3020	4822 051 20183	18 k Ω
3021	4822 101 11034	22 k Ω
3023	4822 051 10104	100 k Ω
3024	4822 051 10153	15 k Ω
3026	4822 051 20222	2.2 k Ω
3027	4822 051 10102	1 k Ω
3101	4822 051 10102	1 k Ω
3102	4822 051 10102	1 k Ω
3103	4822 051 10152	1.5 k Ω
3104	4822 100 11632	2.2 k Ω
3105	4822 051 10472	4.7 k Ω
3106	4822 101 11064	4.7 k Ω
3107	4822 051 10103	10 k Ω
3108	4822 100 11633	47 k Ω
3109	4822 051 10105	1 M Ω
3110	4822 116 52256	2.2 k Ω
3111	4822 051 10223	22 k Ω
3112	4822 116 52215	220 Ω
3113	4822 051 10473	47 k Ω
3114	4822 051 20222	2.2 k Ω
3115	4822 116 90536	120 Ω
3116	4822 051 10103	10 k Ω
3117	4822 051 10103	10 k Ω
3118	4822 051 10102	1 k Ω
3119	4822 051 10104	100 k Ω
3120	4822 116 52251	18 k Ω
3121	4822 101 11034	22 k Ω
3123	4822 051 10104	100 k Ω
3124	4822 051 10153	15 k Ω
3126	4822 051 20222	2.2 k Ω
3127	4822 051 10102	1 k Ω
3201	4822 116 52256	2.2 k Ω
3202	4822 051 10152	1.5 k Ω
3203	4822 051 10152	1.5 k Ω
3204	4822 116 52191	33 Ω
3205	4822 051 10103	10 k Ω
3206	4822 116 52256	2.2 k Ω
3207	4822 116 52284	47 k Ω
3208	5322 116 80609	7.5 k Ω
3209	4822 051 10683	68 k Ω
3210	4822 100 11633	47 k Ω
3211	4822 116 52233	10 k Ω
3212	4822 051 10473	47 k Ω
3213	4822 051 10473	47 k Ω
3214	4822 051 10105	1 M Ω

FM-Audio Signal panel JAF

3215	4822 116 52245	150 kΩ	3558	4822 051 20222	2.2 kΩ
3216	4822 116 52263	2 kΩ	3559	4822 051 20222	2.2 kΩ
3217	4822 116 52233	10 kΩ	3567	4822 116 52197	56 Ω
3218	4822 116 52257	22 kΩ	3568	4822 051 20222	2.2 kΩ
3219	4822 051 10335	3.3 MΩ	3569	4822 051 10152	1.5 kΩ
3220	4822 051 10102	1 kΩ	3570	4822 051 10472	4.7 kΩ
3221	4822 116 52233	10 kΩ	3571	4822 051 10759	75 Ω
3222	4822 116 52284	47 kΩ	3579	4822 116 52217	270 Ω
3223	4822 116 52234	100 kΩ	3580	4822 116 52217	270 Ω
3224	4822 116 52234	100 kΩ	3581	4822 116 52191	33 Ω
3225	4822 116 52233	10 kΩ	3618	4822 051 10339	33 Ω
3226	4822 051 10103	10 kΩ	3619	4822 051 10103	10 kΩ
3227	4822 051 10473	47 kΩ	3623	4822 051 10103	10 kΩ
3228	4822 051 10473	47 kΩ	3624	4822 116 52303	8 kΩ
3229	4822 116 52257	22 kΩ	3625	4822 051 10103	10 kΩ
3230	4822 051 10154	150 kΩ	3626	4822 116 52243	1.5 kΩ
3231	4822 051 10224	220 kΩ	3627	4822 116 52204	1 kΩ
3232	4822 051 10104	100 kΩ	3635	4822 116 52234	100 kΩ
3233	4822 116 52296	6.8 kΩ	3636	4822 051 10473	47 kΩ
3234	4822 116 52233	10 kΩ	3637	4822 051 10104	100 kΩ
3235	4822 051 10104	100 kΩ	3639	4822 051 10224	220 kΩ
3236	4822 116 52234	100 kΩ	3676	4822 051 20222	2.2 kΩ
3360	4822 051 10224	220 kΩ	3695	4822 051 10472	4.7 kΩ
3361	4822 116 52175	100 Ω	3699	4822 116 52217	270 Ω
3365	4822 116 52175	100 Ω	3750	4822 051 10151	150 Ω
3382	4822 116 52175	100 Ω	3751	4822 051 10151	150 Ω
3383	4822 051 10224	220 kΩ	3752	4822 051 10104	100 kΩ
3384	4822 116 52175	100 Ω	3753	4822 051 10104	100 kΩ
3385	4822 051 10224	220 kΩ	3760	4822 051 10561	560 Ω
3386	4822 051 10224	220 kΩ	3761	4822 051 10561	560 Ω
3387	4822 051 10224	220 kΩ	3763	4822 051 10122	1.2 kΩ
3388	4822 051 10224	220 kΩ	3764	4822 051 10122	1.2 kΩ
3389	4822 051 10101	100 Ω	3764	4822 051 10182	1.8 kΩ (only for NICAM)
3390	4822 051 10101	100 Ω	3768	4822 101 11064	4.7 kΩ
3391	4822 051 10224	220 kΩ	3769	4822 051 10472	4.7 kΩ
3392	4822 051 10104	100 kΩ	3770	4822 051 10103	10 kΩ
3393	4822 051 20222	2.2 kΩ	3771	4822 051 10471	470 Ω
3394	4822 051 10224	220 kΩ	3772	4822 051 10561	560 Ω
3460	4822 051 10224	220 kΩ	3773	4822 051 10472	4.7 kΩ
3461	4822 116 52175	100 Ω	3774	4822 051 10471	470 Ω
3465	4822 116 52175	100 Ω	3775	4822 051 10689	68 Ω
3482	4822 116 52175	100 Ω	3776	4822 051 10471	470 Ω
3483	4822 051 10224	220 kΩ	3777	4822 051 10154	150 kΩ
3484	4822 116 52175	100 Ω	3778	4822 051 10154	150 kΩ
3485	4822 051 10224	220 kΩ	3779	4822 051 10511	510 Ω
3486	4822 051 10224	220 kΩ	3780	4822 051 10102	1 kΩ
3487	4822 051 10224	220 kΩ	3781	4822 051 10393	39 kΩ
3488	4822 051 10224	220 kΩ	3782	4822 051 10102	1 kΩ
3489	4822 051 10101	100 Ω	3783	4822 051 10471	470 Ω
3490	4822 051 10101	100 Ω	3784	4822 051 10393	39 kΩ
3491	4822 051 10224	220 kΩ	3785	4822 051 10229	22 Ω
3492	4822 051 10104	100 kΩ	3786	4822 051 10471	470 Ω
3493	4822 051 20222	2.2 kΩ	3802	4822 051 10479	47 Ω
3494	4822 051 10224	220 kΩ	3805	4822 051 10681	680 Ω (only for not NICAM)
3500	4822 051 10153	15 kΩ	3807	4822 051 10681	680 Ω (only for not NICAM)
3500	4822 051 10103	10 kΩ	3808	4822 051 10103	10 kΩ
3500	4822 051 10223	22 kΩ	3809	4822 051 10102	1 kΩ
3500	4822 051 10333	33 kΩ	3811	4822 051 10392	3.9 kΩ
3500	4822 051 10102	1 kΩ	3814	4822 051 10472	4.7 kΩ
3500	4822 051 10332	3.3 kΩ	3815	4822 051 10472	4.7 kΩ
3500	4822 051 10152	1.5 kΩ	3816	4822 051 20222	2.2 kΩ
3500	4822 051 20222	2.2 kΩ	3817	4822 051 10103	10 kΩ
3502	4822 116 52197	56 Ω	3818	4822 051 10102	1 kΩ (only for NICAM)
3505	4822 051 10759	75 Ω	3820	4822 051 10681	680 Ω
3540	4822 051 10102	1 kΩ	3820	4822 051 10102	1 kΩ (only for PALI)
3541	4822 051 10473	47 kΩ	3821	4822 051 10472	4.7 kΩ
3542	4822 051 10153	15 kΩ	3821	4822 051 10102	7.5 kΩ (only for PALI)
3543	4822 051 10103	10 kΩ	3822	4822 051 10681	680 Ω
3557	4822 116 52204	1 kΩ	3822	4822 051 10102	1 kΩ (only for PALI)

FM-Audio Signal panel JAF

3823	4822 051 10472	4.7 kΩ
3823	4822 051 10252	7.5 kΩ (only for PALI)
3824	4822 051 10153	15 kΩ
3825	4822 051 10103	10 kΩ (only for NICAM)
3826	4822 051 10103	10 kΩ (only for NICAM)
3830	4822 051 10104	100 kΩ (only for NICAM)
3831	4822 051 10104	100 kΩ (only for NICAM)
3832	4822 051 10104	100 kΩ
3833	4822 051 10102	1 kΩ
3834	4822 051 10103	10 kΩ
3835	4822 051 10332	3.3 kΩ
3836	4822 051 10471	470 Ω
3837	4822 116 52233	10 kΩ (only for NICAM)
3838	4822 051 10103	10 kΩ (only for NICAM)
3839	4822 051 10103	10 kΩ (only for NICAM)
3857	4822 051 10472	4.7 kΩ (only for NICAM)
3860	4822 051 10561	560 Ω
3861	4822 051 10561	560 Ω
3862	4822 116 52217	270 Ω
3863	4822 116 52217	270 Ω
3864	4822 116 52217	270 Ω
3865	4822 116 52217	270 Ω
3901	4822 051 10008	0 Ω
3902	4822 051 10008	0 Ω
3903	4822 051 10008	0 Ω
3905	4822 051 10008	0 Ω
3907	4822 051 10008	0 Ω
3908	4822 051 10008	0 Ω
3912	4822 051 10008	0 Ω
3913	4822 051 10008	0 Ω
3914	4822 051 10008	0 Ω
3915	4822 051 10008	0 Ω
3930	4822 051 10008	0 Ω
3931	4822 051 10008	0 Ω
3950	4822 051 10008	0 Ω
3953	4822 051 10008	0 Ω
3954	4822 051 10008	0 Ω (only for Multistereo)
3955	4822 051 10008	0 Ω
3956	4822 051 10008	0 Ω
3959	4822 051 10008	0 Ω
3961	4822 051 10008	0 Ω

COILS

5201	4822 157 53265	
5202	4822 157 52285	
5203	4822 157 52285	
5204	4822 157 50964	
5501	4822 157 53102	
5502	4822 157 53102	
5761	4822 157 62718	
5762	4822 157 62718	
5770	4822 157 60142	
5771	4822 157 60142	
5773	4822 242 72562	
5773	4822 242 72558	(only for PALI)
5800	4822 157 52403	
5801	4822 157 50964	
5810	4822 157 50964	
5822	4822 152 20558	
5861	4822 157 50964	

DIODES

6201	4822 130 30621	1N4148
6202	4822 130 30621	1N4148
6203	4822 130 30621	1N4148
6306	4822 130 80233	BZX79-C12
6307	4822 130 80233	BZX79-C12

6314	4822 130 80233	BZX79-C12
6315	4822 130 80233	BZX79-C12
6406	4822 130 80233	BZX79-C12
6407	4822 130 80233	BZX79-C12
6414	4822 130 80233	BZX79-C12
6415	4822 130 80233	BZX79-C12
6502	4822 130 30621	1N4148
6504	4822 130 80233	BZX79-C12
6505	4822 130 34278	BZX79-C6V8
6510	4822 130 30621	1N4148
6512	4822 130 34278	BZX79-C6V8
6513	4822 130 80233	BZX79-C12
6601	4822 130 31024	BZX79-C18
6603	4822 130 30621	1N4148
6609	4822 130 31024	BZX79-C18
6611	4822 130 30621	1N4148
6617	4822 130 34278	BZX79-C6V8
6619	4822 130 30621	1N4148
6770	4822 130 61219	BZX79-C10
6802	5322 130 34953	BB405B

TRANSISTORS & IC's

7001	5322 130 42136	BC848C
7002	5322 130 41983	BC858B
7003	5322 130 42136	BC848C
7101	5322 130 42136	BC848C
7102	5322 130 41983	BC858B
7103	5322 130 42136	BC848C
7201	5322 130 41983	BC858B
7202	4822 209 60131	TDA2515/N1
7203	4822 130 41715	BC328-40
7204	4822 130 61207	BC848
7205	4822 209 60127	AN3972FC
7206	5322 130 41982	BC848B
7207	4822 209 82362	NJM4556D
7208	4822 209 82513	BA6138
7209	5322 130 41982	BC848B
7210	4822 130 61207	BC848
7211	4822 130 61207	BC848
7212	4822 130 61207	BC848
7213	4822 130 61207	BC848
7322	5322 130 42136	BC848C
7333	4822 209 10263	TC4052BP
7422	5322 130 42136	BC848C
7512	5322 130 41982	BC848B
7517	5322 130 41983	BC858B
7521	4822 130 41344	BC337-40
7531	4822 209 10263	TC4052BP
7607	4822 130 61207	BC848
7608	4822 130 41715	BC328-40
7609	4822 130 61207	BC848
7623	5322 130 42136	BC848C
7635	5322 209 10421	TC4094BP
7750	4822 209 61026	TDA8415/V1
7760	4822 209 63106	TDA3857/V2
7770	4822 209 73558	TA8662N
7771	5322 130 41982	BC848B
7772	5322 130 41983	BC858B
7800	4822 209 61114	CF70123
7801	4822 209 63058	TC4001BFN ELP
7810	4822 209 72545	SAA7220P/C
7820	4822 209 73236	TDA1543/N2
7821	5322 209 70694	TL072CP-00
7830	5322 209 10576	TC4053BP
7831	5322 130 41982	BC848B
7832	5322 130 41982	BC848B
7860	4822 130 41344	BC337

Operating panel JDC7

MISCELLANEOUS

0011	4822 267 40624	SOCKET 5-FOLD
0012	4822 267 40697	SOCKET 6-FOLD
0013	4822 265 40475	SOCKET 8-FOLD
0014	4822 265 40721	SOCKET 10-FOLD
0015	4822 267 50777	SOCKET 16-FOLD
0016	4822 267 31253	PHONE-JACK
0017	4822 256 91708	DISPLAY HOLDER
0018	4822 276 11349	TIP-SWITCH
0019	4822 255 41191	LED-HOLDER
0021	4822 256 91707	IR-SOCKET

CRYSTALS

1002	4822 242 72574	4,19 MHz
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CAPACITORS

2011	4822 121 51387	10 nF	16V
2012	4822 124 41518	470 μ F	16V
2020	4822 124 41518	470 μ F	16V
2021	4822 121 51298	1.5 nF	100V
2022	4822 121 51298	1.5 nF	100V
2031	4822 121 51387	10 nF	16V
2070	4822 122 33197	1 nF	50V
2071	4822 122 33197	1 nF	50V

RESISTORS

3005	4822 116 52283	4.7 k Ω
3020	4822 116 52182	15 Ω
3021	4822 116 52182	15 Ω
3022	4822 050 22004	300 k Ω
3023	4822 050 22004	300 k Ω
3026	4822 050 11003	10 k Ω
3027	4822 050 11003	10 k Ω
3028	4822 116 52233	10 k Ω
3029	4822 116 52233	10 k Ω
3030	4822 116 52257	22 k Ω
3031	4822 116 52283	4.7 k Ω
3032	4822 116 52283	4.7 k Ω
3033	4822 116 52233	10 k Ω
3040	4822 116 52233	10 k Ω
3041	4822 116 52233	10 k Ω
3042	4822 116 52233	10 k Ω
3043	4822 116 52233	10 k Ω
3044	4822 116 52256	2.2 k Ω
3045	4822 116 52256	2.2 k Ω
3046	4822 116 52256	2.2 k Ω
3047	4822 116 52256	2.2 k Ω
3050	4822 116 52283	4.7 k Ω
3051	4822 116 52175	100 Ω
3052	4822 116 52175	100 Ω
3060	4822 101 21138	ROTARY POT 10 k Ω
3061	4822 116 52233	10 k Ω
3066	4822 116 52257	22 k Ω
3067	4822 116 52257	22 k Ω
3068	4822 105 11064	SLIDE POT
3070	4822 101 21137	ROTARY POT 5 k Ω
3081	4822 116 52176	10 Ω
3082	4822 116 52283	4.7 k Ω
3083	4822 116 52176	10 Ω
3084	4822 116 52283	4.7 k Ω
3090	4822 100 11092	POT 4.7 k Ω
3091	4822 116 52257	22 k Ω
3092	4822 100 11092	POT 4.7 k Ω

3093	4822 116 52257	22 k Ω
3094	4822 116 52263	2.7 k Ω
3095	4822 116 52263	2.7 k Ω
3099	4822 116 52283	4.7 k Ω
3136	4822 116 52204	1 k Ω
3137	4822 116 52204	1 k Ω
3138	4822 116 52204	1 k Ω
3139	4822 116 52204	1 k Ω
3140	4822 116 52204	1 k Ω
3141	4822 116 52204	1 k Ω
3142	4822 116 52204	1 k Ω
3143	4822 116 52204	1 k Ω
3144	4822 116 52204	1 k Ω
3145	4822 116 52204	1 k Ω
3146	4822 116 52204	1 k Ω
3147	4822 116 52204	1 k Ω
3735	4822 116 52211	150 Ω

COILS

5010	4822 157 52286
5070	4822 157 52265
5071	4822 157 53937
5072	4822 157 52265

DIODES

6020	4822 130 81268	SD101A
6036	4822 130 30621	1N4148
6037	4822 130 30621	1N4148
6038	4822 130 30621	1N4148
6039	4822 130 30621	1N4148
6040	4822 130 30621	1N4148
6041	4822 130 30621	1N4148
6042	4822 130 30621	1N4148
6043	4822 130 30621	1N4148
6044	4822 130 30621	1N4148
6045	4822 130 30621	1N4148
6046	4822 130 30621	1N4148
6047	4822 130 30621	1N4148
6050	4822 130 34233	BZX55-C5V1
6072	4822 130 34278	BZX55-C6V8
6735	4822 130 32924	LED TLHG4601

TRANSISTORS & IC's

7030	4822 130 44197	BC558B
7101	4822 209 63048	TMP47C670 JUDP1-1
7120	4822 209 80797	LM393N
7121	4822 214 33109	IR-RECEIVER PAS-C0624
7140	4822 130 90911	DISPLAY 13-MT-28GBK

Operating panel JDCO, JDC5

MISCELLANEOUS

10	4822 267 31042	
11	4822 255 40916	
12	4822 276 11349	
13	4822 265 40721	10 PIN
14	4822 265 40475	8-FOLD
15	4822 267 40697	5-FOLD

CRYSTALS

1002	4822 242 72207	4,19 Mhz
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CAPACITORS

2004	4822 122 33069	33 pF	50V
2005	4822 122 33069	33 pF	50V
2011	4822 122 10177	10 nF	25V
2012	4822 124 41518	470 μ F	16V
2020	4822 124 41518	470 μ F	16V
2021	4822 121 51298	1.5 nF	
2022	4822 121 51298	1.5 nF	
2031	4822 122 10177	10 nF	25V
2070	4822 122 33197	1 nF	50V
2071	4822 122 33197	1 nF	50V

RESISTORS

3001	4822 116 80175	4.7 k Ω
3002	4822 050 24702	4.7 k Ω
3003	4822 116 53109	1.8 k Ω
3020	4822 116 52182	15 Ω
3021	4822 116 52182	15 Ω
3022	4822 050 22004	200 k Ω
3023	4822 050 22004	200 k Ω
3026	4822 050 11003	10 k Ω
3027	4822 050 11003	10 k Ω
3028	4822 116 80173	10 k Ω
3029	4822 116 80173	10 k Ω
3030	4822 116 52257	22 k Ω
3031	4822 116 80173	10 k Ω
3032	4822 116 80173	10 k Ω
3033	4822 116 80173	10 k Ω
3040	4822 116 80175	4.7 k Ω
3041	4822 116 80175	4.7 k Ω
3042	4822 116 80175	4.7 k Ω
3043	4822 116 80175	4.7 k Ω
3050	4822 116 80175	4.7 k Ω
3051	4822 116 52175	100 Ω
3052	4822 116 52175	100 Ω
3061	4822 116 80173	10 k Ω
3066	4822 116 52257	22 k Ω
3067	4822 116 52257	22 k Ω
3068	4822 105 11025	SLIDE POT
3070	4822 103 90072	ROTARY POT
3083	4822 116 52176	10 Ω
3084	4822 116 52176	10 Ω
3085	4822 116 80175	4.7 k Ω
3086	4822 116 80175	4.7 k Ω
3090	4822 100 11092	4.7k Ω
3091	4822 116 52257	22 k Ω
3092	4822 100 11092	4.7 k Ω
3093	4822 116 52257	22 k Ω
3094	4822 116 52263	2.7 k Ω
3095	4822 116 52263	2.7 k Ω

COILS

5010	4822 157 52286
5070	4822 157 52265
5071	4822 157 53937
5072	4822 157 52265

DIODES

6020	4822 130 81268	SD101A
6040	4822 130 30621	1N4148
6041	4822 130 30621	1N4148
6042	4822 130 30621	1N4148
6043	4822 130 30621	1N4148
6044	4822 130 30621	1N4148

6045	4822 130 30621	1N4148
6046	4822 130 30621	1N4148
6050	4822 130 34233	BZX79-B5V1
6072	4822 130 34278	BZX79-B6V8

TRANSISTORS & IC's

7030	4822 130 40937	BC548B
7101	4822 209 63048	TMP47C670 JUDF
7120	4822 209 80797	LM393N
7121	4822 218 10216	IR-RECEIVER
7121	4822 214 33099	IR-RECEIVER (only for VR502)
7140	4822 130 90911	13-MT-28GBK

Control panel OSD JCOOSD

CONNECTORS

0007	4822 267 50621	SOCKET 7 PIN
0008	4822 267 50721	SOCKET 9-PIN
0009	4822 267 50722	SOCKET 10-PIN
0010	4822 265 40722	SOCKET 11-PIN

MISCELLANEOUS

1300	4822 242 72965	17,734476 MHz
1401	4822 242 70938	32,768 kHz
1402	4822 242 71222	12 MHz
1989	4822 138 10419	BATTERY 60 MA

CAPACITORS

2200	4822 124 42097	22 μ F	16 V(only for TPC)
2201	4822 124 41516	47 μ F	16 V(only for TPC)
2202	4822 124 41521	10 μ F	25 V(only for TPC)
2203	4822 124 32893	100 μ F	(only for TPC)
2301	4822 124 22799	1 μ F	63 V
2302	4822 122 31961	68 pF	63 V
2304	4822 122 31797	22 nF	63 V
2305	4822 122 31947	100 nF	
2306	4822 124 41516	47 μ F	16 V
2307	4822 122 31947	100 nF	
2308	4822 122 31797	22 nF	63 V
2309	4822 124 22657	100 μ F	10 V
2310	4822 122 31947	100 nF	
2311	4822 125 50394	4,5 pF-20 pF	
2312	4822 122 32444	33 pF	
2313	4822 125 50394	4,2-20 pF	
2314	4822 122 31971	10 pF	50 V
2315	4822 122 31772	47 pF	50 V
2316	4822 122 31797	22 nF	63 V
2317	4822 122 31797	22 nF	63 V
2403	4822 125 50394	4,2-20 pF	
2404	4822 122 31797	22 nF	63 V
2405	4822 122 31947	100 nF	
2406	4822 122 31947	100 nF	
2409	4822 124 41516	47 μ F	16 V
2410	4822 122 32482	22 pF	63 V
2411	4822 122 32482	22 pF	63 V
2412	4822 122 31797	22 nF	63 V
2413	4822 122 31797	22 nF	63 V

RESISTORS

3200	4822 051 20222	2.2 k Ω (only for TPC)
3201	4822 116 52217	270 Ω (only for TPC)
3202	4822 116 52211	150 Ω (only for TPC)
3203	4822 116 52222	390 Ω (only for TPC)
3204	4822 051 10223	22 k Ω (only for TPC)
3205	4822 051 10563	56 k Ω (only for TPC)
3300	4822 051 10223	22 k Ω
3301	4822 051 10682	6.8 k Ω
3302	4822 051 10682	6.8 k Ω
3303	4822 051 10472	4.7 k Ω
3305	4822 051 10689	68 Ω
3306	4822 051 10102	1 k Ω
3307	4822 051 10473	47 k Ω
3308	4822 051 10271	270 Ω
3309	4822 116 52256	2.2 k Ω
3311	4822 116 52199	68 Ω
3312	4822 051 10102	1 k Ω
3313	4822 051 10182	1.8 k Ω
3314	4822 051 10271	270 Ω

3315	4822 100 11417	2.2 k Ω
3316	4822 051 10473	47 k Ω
3317	4822 051 10821	820 Ω
3318	4822 051 10109	10 Ω
3319	4822 051 10331	330 Ω
3320	4822 051 20222	2.2 k Ω
3321	4822 051 10221	220 Ω
3322	4822 051 10472	4.7 k Ω
3323	4822 051 20222	2.2 k Ω
3324	4822 051 10472	4.7 k Ω
3330	4822 051 10103	10 k Ω
3331	4822 051 10273	27 k Ω
3332	4822 051 10759	75 Ω
3401	4822 051 10223	22 k Ω
3402	4822 051 10472	4.7 k Ω
3403	4822 051 10101	100 Ω
3404	4822 116 52175	100 Ω
3405	4822 051 10103	10 k Ω
3406	4822 116 52231	820 Ω
3407	4822 051 10103	10 k Ω
3408	4822 051 10103	10 k Ω
3409	4822 051 10471	470 Ω
3410	4822 051 10471	470 Ω
3411	4822 051 10472	4.7 k Ω
3412	4822 051 10472	4.7 k Ω
3413	4822 116 52233	10 k Ω
3800	4822 051 10008	0 Ω
3801	4822 051 10008	0 Ω
3803	4822 051 10008	0 Ω
3804	4822 051 10008	0 Ω
3805	4822 051 10008	0 Ω (only for TPC)
3806	4822 051 10008	0 Ω
3807	4822 051 10008	0 Ω
3808	4822 051 10008	0 Ω
3810	4822 051 10008	0 Ω
3811	4822 051 10008	0 Ω
3812	4822 051 10008	0 Ω
3815	4822 051 10008	0 Ω
3816	4822 051 10008	0 Ω (only for TPC)
3818	4822 051 10008	0 Ω (only for TPC)

COILS

5300	4822 157 52286
5301	4822 157 60501
5750	4822 157 50961
5770	4822 157 50961

DIODES

6300	4822 130 30621	1N4148
6301	4822 130 30621	1N4148
6302	4822 130 30621	1N4148
6303	4822 130 30621	1N4148
6401	4822 130 30621	1N4148

TRANSISTORS & IC's

7200	5322 209 10576	IC 4053BP(only for TPC)
7300	5322 130 41982	BC848B
7301	5322 130 41982	BC848B
7302	5322 130 41982	BC848B
7303	5322 130 41982	BC848B
7304	5322 130 41983	BC858B
7305	5322 130 41982	BC848B
7306	5322 130 44336	BSV52
7308	5322 130 41983	BC858B

Control panel OSD JCOOSD

Control panel VPT JCOVPT

7350	4822 209 61821	D6450C/G
7401	5322 130 41983	BC858B
7450	5322 209 11318	P8032
7451	4822 209 63057	EPROM JUCO1-1P (only for OSD)
7451	4822 209 63047	EPROM JUCT1-1P (only for TPC)
7452	4822 209 61647	CD74HCT573E
7453	4822 209 73197	PCF8583P

CONNECTORS

0007	4822 267 50621	SOCKET 7 PIN
0008	4822 267 50721	SOCKET 9-PIN
0009	4822 267 50722	SOCKET 10-PIN
0010	4822 265 40722	SOCKET 11-PIN
0011	4822 255 41187	SOCKET 28-PIN

MISCELLANEOUS

1401	4822 242 72892	32,768 kHz
1752	4822 242 71222	12 MHz
1800	4822 242 72367	13,875 MHz
1900	4822 320 40186	LC-DELAY LINE
1989	4822 138 10419	BATTERY V60R 60 MA
1990	4822 138 10419	BATTERY V60R 60 MA

CAPACITORS

2301	4822 122 31797	22 nF
2310	4822 122 31947	100 nF
2401	4822 125 50394	4,2-20 pF
2402	4822 122 31797	22 nF
2403	4822 122 31774	56 pF
2404	4822 122 32442	10 nF
2405	4822 122 31947	100 nF
2406	4822 122 31947	100 nF
2408	4822 122 31947	100 nF
2411	4822 124 41869	4.7 μ F 25 V
2412	4822 122 32442	10 nF
2413	5322 122 33446	3.3 nF
2414	4822 122 32542	47 nF
2415	4822 124 41869	4.7 μ F 25 V
2416	4822 124 41875	100 μ F 6,3 V
2417	4822 124 41869	4.7 μ F 25 V
2418	4822 122 31947	100 nF
2419	4822 124 42092	1 μ F 50 V
2601	4822 121 42781	470 nF 50 V
2602	4822 121 42781	470 nF 50 V
2603	4822 122 32927	220 nF 5 V
2604	4822 122 31961	68 pF
2605	4822 122 31774	56 pF
2751	4822 122 31797	22 nF
2752	4822 122 32482	22 pF
2753	4822 122 32482	22 pF
2754	4822 124 41521	10 μ F 25 V
2755	4822 124 41516	47 μ F 16 V
2757	4822 124 22714	220 μ F 25 V
2759	4822 122 32442	10 nF
2762	4822 122 32504	15 pF
2763	5322 122 31647	1 nF
2764	4822 122 31727	470 nF
2765	4822 122 31797	22 nF
2766	4822 122 32142	270 pF
2767	4822 122 31765	100 pF
2768	4822 122 31965	220 pF
2771	4822 122 31773	560 pF
2773	4822 124 41516	47 μ F 16 V
2774	4822 124 41868	2.2 μ F 50 V
2775	4822 124 41868	2.2 μ F 50 V
2776	4822 124 41868	2.2 μ F 50 V
2780	4822 124 41516	47 μ F 16 V

2781	4822 122 32542	47 nF
2789	4822 124 22425	2.2 μ F 5
2792	4822 122 32542	47 nF
2799	4822 122 32891	68 nF
2800	4822 122 32504	15 pF

Control panel VPT JCOVPT

2802	4822 122 31825	27 pF	
2803	4822 122 31947	100 nF	
2847	4822 124 41521	10 μ F	25 V
2851	4822 122 32442	10 nF	
2852	4822 122 32442	10 nF	
2853	4822 122 31947	100 nF	
2857	5322 122 31647	1 nF	
2858	4822 122 31947	100 nF	
2859	4822 122 31766	0 F	
2860	4822 122 32442	10 nF	
2861	5322 122 31647	1 nF	
2862	4822 122 32442	10 nF	
2863	4822 122 31947	100 nF	
2864	4822 122 31947	100 nF	
2865	4822 122 32442	10 nF	
2870	4822 122 31797	22 nF	
2872	4822 121 42781	470 nF	50 V

RESISTORS

3000	4822 051 10008	0 Ω
3001	4822 051 10008	0 Ω
3010	4822 051 10008	0 Ω
3021	4822 051 10008	0 Ω
3021	4822 051 10008	0 Ω
3024	4822 051 10008	0 Ω
3032	4822 051 10008	0 Ω
3042	4822 051 10008	0 Ω
3045	4822 051 10008	0 Ω
3046	4822 051 10008	0 Ω
3047	4822 051 10008	0 Ω
3048	4822 051 10008	0 Ω
3049	4822 051 10008	0 Ω
3050	4822 051 10008	0 Ω
3051	4822 051 10008	0 Ω
3052	4822 051 10008	0 Ω
3053	4822 051 10008	0 Ω
3054	4822 051 10008	0 Ω
3055	4822 051 10008	0 Ω
3056	4822 051 10008	0 Ω
3058	4822 051 10008	0 Ω
3059	4822 051 10008	0 Ω
3303	4822 051 10182	1.8 k Ω
3304	4822 051 10822	8.2 k Ω
3305	4822 051 10271	270 Ω
3306	4822 051 10681	680 Ω
3307	4822 051 10103	10 k Ω
3308	4822 051 10471	470 Ω
3309	4822 051 10471	470 Ω
3400	4822 116 52233	10 k Ω
3401	4822 051 10103	10 k Ω
3402	4822 051 10472	4.7 k Ω
3404	4822 051 10103	10 k Ω
3405	4822 051 10103	10 k Ω
3406	4822 101 10855	22 k Ω
3407	4822 051 10829	82 Ω
3430	4822 051 10223	22 k Ω
3431	4822 051 10472	4.7 k Ω
3432	4822 051 10333	33 k Ω
3433	4822 051 10103	10 k Ω
3434	4822 051 10101	100 Ω
3435	4822 051 10101	100 Ω
3436	4822 051 10182	1.8 k Ω
3501	4822 116 52233	10 k Ω
3502	4822 116 52233	10 k Ω
3503	4822 051 10472	4.7 k Ω
3504	4822 116 52228	680 Ω

3505	4822 051 10332	3.3 k Ω
3506	4822 051 10103	10 k Ω
3507	4822 051 10681	680 Ω
3508	4822 051 10103	10 k Ω
3509	4822 051 10822	8.2 k Ω
3510	4822 051 10331	330 Ω
3511	4822 051 10822	8.2 k Ω
3512	4822 051 20222	2.2 k Ω
3513	4822 051 10224	220 k Ω
3514	4822 051 10473	47 k Ω
3601	4822 051 10223	22 k Ω
3605	4822 051 10102	1 k Ω
3606	4822 051 10473	47 k Ω
3607	4822 051 10103	10 k Ω
3608	4822 051 10223	22 k Ω
3762	4822 051 10221	220 Ω
3763	4822 051 10221	220 Ω
3764	4822 051 10472	4.7 k Ω
3765	4822 051 10472	4.7 k Ω
3771	4822 051 10102	1 k Ω
3773	4822 051 10821	820 Ω
3777	4822 051 10431	430 Ω
3778	4822 051 10431	430 Ω
3779	4822 051 10431	430 Ω
3780	4822 051 10689	68 Ω
3782	4822 051 10472	4.7 k Ω
3783	4822 051 10472	4.7 k Ω
3784	4822 051 10472	4.7 k Ω
3789	4822 051 20222	2.2 k Ω
3790	4822 051 10689	68 Ω
3800	4822 051 10563	56 k Ω
3804	4822 051 10472	4.7 k Ω
3850	4822 051 10103	10 k Ω
3851	4822 051 10102	1 k Ω
3853	4822 051 10102	1 k Ω
3854	4822 116 52204	1 k Ω
3856	4822 050 15603	56 k Ω
3857	4822 051 10681	680 Ω
3858	4822 116 52204	1 k Ω
3859	4822 051 10151	150 Ω
3860	4822 116 52182	15 Ω
3862	4822 051 10104	100 k Ω
3864	4822 051 10102	1 k Ω
3871	4822 051 10681	680 Ω
3872	4822 051 10271	270 Ω
3875	4822 051 10103	10 k Ω
3876	4822 116 52233	10 k Ω

COILS

5400	4822 157 52265
5571	4822 157 52825
5600	4822 157 52286
5601	4822 157 52286
5700	4822 157 52265
5750	4822 157 50961
5770	4822 157 50961
5800	4822 157 52224
5801	4822 157 51999

DIODES

6301	4822 130 33004	BZX84-B5V6
6501	4822 130 30621	1N4148
6503	4822 130 30621	1N4148
6508	4822 130 30621	1N4148

Control panel VPT JCOVPT**TRANSISTORS & IC's**

7201	5322 130 41982	BC848B
7202	5322 130 41982	BC848B
7203	5322 130 41982	BC848B
7302	5322 130 41982	BC848B
7303	5322 130 41982	BC848B
7400	5322 130 41982	BC848B
7401	4822 130 60383	BF824
7403	4822 130 61799	DTA144TK
7410	5322 130 41983	BC858B
7453	4822 209 73197	PCF8583P
7501	5322 130 41982	BC848B
7502	5322 130 41982	BC848B
7503	5322 130 41982	BC848B
7504	5322 130 44336	BSV52
7601	4822 130 61798	DTC143TK
7602	4822 130 62492	DTC144TK
7603	5322 130 41983	BC858B
7604	4822 130 61798	DTC143TK
7605	4822 130 61799	DTA144TK
7750	5322 209 11318	P8032
7751	4822 209 63082	EPROM JUCV1-1P
7752	4822 209 61647	CD74HCT573E
7753	4822 209 62506	TC5564APL-15
7760	4822 209 73879	SAA5243P/E-M2
7770	4822 209 61805	HY6264P-15
7780	4822 209 72972	SAA5231/V6
7785	4822 209 61806	AN3916
7790	4822 209 71415	MC1377P
7795	5322 209 10576	TC4053BP
7796	5322 209 10576	TC4053BP
7801	5322 130 41983	BC858B
7802	5322 130 44336	BSV52
7803	5322 130 41982	BC848B
7804	5322 130 41982	BC848B